

**EDUCATORS' PERCEPTIONS OF THE IMPACT OF THE LEARNING
ENVIRONMENT ON THE BEHAVIOUR OF LEARNERS DIAGNOSED WITH
ATTENTION DEFICIT/HYPERACTIVITY DISORDER**

BY

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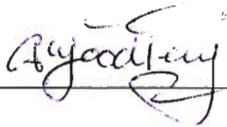
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DEDICATION

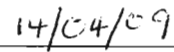
This study is dedicated to my parents who gave unending love and support for my education and achievements. Thank you for your encouragement and inspiration. You both have sacrificed so that I may know the value of a sound education.

DECLARATION

I, Caressa Alexandria Moodley, hereby declare that the dissertation entitled “ The investigation of educators’ perceptions of the impact of the learning environment on the behaviour of learners diagnosed with Attention Deficit/Hyperactivity Disorder” is the result of my own investigation and research and that it has not been submitted in part or full for any other degree or to any other University.



CARESSA ALEXANDRIA MOODLEY



DATE

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I thank God Almighty for with Him “All things are possible.”

ABSTRACT

The purpose of this study was to investigate educators perceptions of the impact of the learning environment on the behaviour of learners diagnosed with Attention Deficit Hyperactivity Disorder (ADHD).

The research has focused on five learners who were diagnosed with ADHD in a school in the Durban South region. All five learners were previously on medication for the treatment of ADHD but their parents had decided against it. The educators of these learners were interviewed and they were also asked to complete an observation checklist. The researcher was able to determine what physical features of the classroom are distracting for learners diagnosed with ADHD as well as how social interactions in the classroom influence the behaviour of these learners.

The results of this study have indicated that classroom arrangements, stationary and classroom resources impact on the behaviour of learners diagnosed with ADHD. Social interactions taking place between the learner with ADHD, the peers and the educator also impact on the behaviour of these learners.

The implications of the findings of this study are important to educators who are trying to minimize distractions in the classroom so teaching and learning is not interrupted. The implications are also significant for curriculum designers of the in-service training of educators.

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CHAPTER ONE

INTRODUCTION

*I felt a Cleaving in my mind-
As if my Brain has split-
I tried to match it- Seam by Seam-
But could not make them fit.*

*The thought behind I strove to join
Unto the thought before-
But sequence raveled out of Sound-
Like Balls-upon a Floor.*

[Emily Dickinson (1864) cited in Hallowell & Ratey, 1994, p. 70]

This poem provides a pertinent description of the subjective experience of an ADHD mind. Whilst trying to stay abreast of the mounting mass of details, people with ADHD feel as if their brains are about to split and when they look around, they are only to find their projects rolling around like balls upon a floor. They struggle to express a part of themselves that often seems unraveled when they strive to join the thought behind to the thought before (Hallowell & Ratey, 1994, p. 70).

1.1 BACKGROUND

Attention-deficit hyperactivity disorder (ADHD) is a syndrome characterized by a variety of symptoms, such as distractibility, a short attention-span, poor concentration, daydreaming, restlessness, hyperactivity and impulsiveness (Du Plessis & Strydom, 1999, p.11). ADHD is a new interpretation of an old problem and the syndrome has changed names at least 25 times in the past 120 years and during the 1930's and 1940's , up to 1957, the syndrome was known as hyperkinesis – a rare phenomenon of an incidence of one out of 2000 individuals. These rare individuals seemed to be driven by an inner whirlwind, not just in school, but constantly (Du Plessis & Strydom, 1999, p.11). Over the years, a variety of labels have been attached to children with the condition, including such terms as “minimal brain dysfunction”, “brain injured child syndrome,” “hyperkinetic reaction of childhood,” and “hyperactive child syndrome” (Stordy & Nicholl, 2002, p. 26). Each term has been discarded as new information about the disorder has been discovered (Greenberg & Horn, 1991, p.1). The term “attention deficit disorder” became widely used in the 1980's and today, the official name is attention deficit/hyperactivity disorder (ADHD) (Stordy & Nicholl, 2002, p.26).

The Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV) categorizes ADHD into the following subtypes:

- predominantly inattentive
- predominantly hyperactive-impulsive
- a combination of the two

There are a number of possible causes to ADHD. These include genetics, brain malfunction, environmental causes and food additives and allergies. Many professionals who have experience in managing learners with ADHD recommend that a multi-modal approach be used. This included the medical management as well as behavioural/psychosocial and educational interventions (Rief, 2005). Often, the well known stimulant Ritalin is prescribed without including other strategies.

1.2 RATIONALE

It was the third year of the researcher's practice teaching, when she initially became exposed to Attention Deficit Hyperactivity Disorder (ADHD). A learner diagnosed with ADHD was a constant challenge for her as she was not equipped with the necessary skills to cope with his behaviour and attention problems. It was then that she first became interested in this disorder.

During her third year of teaching, she had a very challenging conversation with a foundation phase educator who was clearly stressed, de-motivated and desperate for help due to difficulties caused by the learner with ADHD. There seemed to be a constant battle raging amongst the learner with ADHD, other learners and the teacher. The educator was anxious for a change in the classroom atmosphere and was willing to modify the current classroom climate to one that would reduce distractions and confrontations.

The researcher embarked on a literature search to assist other educators in their understanding of how the physical environment and the social interactions in the learning milieu impacted on the behaviour of ADHD learners. On reviewing various sources of literature, the researcher found that there was little available literature on this aspect. This prompted her to examine this topic. The findings from this study would be useful to teachers who:

- are experiencing difficulties with ADHD learners and want to create a learning environment that is conducive to learning for all learners, and
- desire to increase their understanding of the influences of social interactions on behaviour of ADHD learners.

Due to the fact that the prevalence rate of ADHD is ever increasing across the different race groups, the researcher felt the need, as an educator to understand how the learning environment can be manipulated and modified to enhance learning. The social environment also needs to be probed as to how effective it is in shaping the behavioural repertoire of learners with ADHD.

1.3 THE PURPOSE OF THE STUDY

The primary focus of this study was to explore the impact of the physical and social environment on the behaviour of ADHD learners in the primary school. Whilst there is a substantial amount of literature on ADHD, there appears to be a lack of research

regarding how the physical environment and the social interactions in the classroom impact on behaviour of learners with ADHD.

The aim of this study is therefore to investigate how the learning environment, both physical and social aspects, influences the behaviour of learners with ADHD.

1.4 THE CRITICAL QUESTIONS

- What features of the school's physical environment affect the behaviour of learners with ADHD?
- How do the interactions in the classroom affect the behaviour of the learner with ADHD?
- What are the challenges that educators experience in their interactions with the learner with ADHD?

1.5 METHODOLOGY

An interpretive case study approach was used to explore the impact of the learning environment on the behaviour of ADHD learners. This study provided detailed case studies of five educators who have learners diagnosed with ADHD in their classroom. The primary focus of this study is the perceptions of these five educators on the impact of the social and physical environment on behaviour of learners with ADHD. Purposive sampling was used to select the educators. Purposive sampling is used when the researcher handpicks participants according to desired criteria. Silverman (2000) states,

that purposive sampling enables us to select a case because it illustrates some feature or process in which we are interested. All five educators had worked with learners with ADHD before and had background knowledge. They were teaching in the same school with the researcher and relationships were already built.

Case studies belong to the area of qualitative research and aim to understand social situations through thick rich description (Denzin, 1998; Patton, 2002). According to Bennet (2003), the advantage of case studies is that they can divulge subtleties as well intricacies of situations and explanations for outcomes. However, the disadvantage of using a case study approach is the extent to which results are generalisable. The researcher chose the case study method because it allows her to observe behaviour in the natural settings and will also be able to use more than one method for data collection otherwise known as multi-method approach. The researcher used the following methods for data collection:

- observation
- semi-structured interviews

The Statistical Package for Social Science program (SPSS) was utilised for the capturing and processing of data. This assisted in ensuring that the data collected provided answers to the research questions and thus validity will be obtained. A graphical representation of the observation for each educator is provided.

1.6 PRESENTATION OF THE CONTENTS

Chapter one: This chapter has provided the introduction to this study, including the statement of the problem, rationale, purpose of this study, methodology and the critical questions of this research.

Chapter two: Reviews the literature on ADHD with special attention to aspects of the learning environment.

Chapter three: This chapter presents the theoretical frameworks that are relevant for this study.

Chapter four: This chapter provides a description of the research methodology, design as well as the research instruments.

Chapter five: The research data are presented and the results are discussed.

Chapter six: This chapter concludes the study, indicates the limitations of the study and makes possible recommendations.

The following chapter, reviews the literature on ADHD, its prevalence, symptoms, causes, diagnosis, management and the literature on how the learning environment can be modified to minimize distractions for learners with ADHD.

CHAPTER TWO

LITERATURE REVIEW

This chapter reviews the literature on ADHD, its prevalence, symptoms, causes, diagnosis, management and the literature on how the learning environment can be modified to minimize distractions for learners with ADHD.

2.1 DEFINITION

Attention-deficit hyperactivity disorder (ADHD) can be described as a complex and controversial term and an internationally validated medical condition, involving brain dysfunction, in which individuals have difficulty controlling impulses, inhibiting their behaviour and sustaining attention span and leads to a variety of educational, behavioural, social and related difficulties (O'Reagan, 2005, p.5).

According to Russell Barkley (2000:32) a renowned ADHD expert, in order to declare ADHD as a developmental disorder, then scientists must show that ADHD:

- *arises early in child development;*
- *distinguishes these children from other children who do not have the disorder;*
- *is pervasive and occurs in many different situations though not necessarily all of them;*

- *affects the child's ability to function successfully in meeting the typical demands placed on children of that age group;*
- *is persistent over time or development, is not readily accounted for by purely environmental or social causes;*
- *is related to abnormalities in brain functioning or development and,*
- *is associated with other biological factors that affect brain functioning or development*

2.2 PREVALENCE OF ADHD

According to literature in the past several years, between 3 to 5 percent of school aged children have ADHD (Rief, 2005). Barkley (2000) states that between 30-50 % of these children may have to repeat a grade at least once, approximately 35% may fail to complete high school and 60% display defiant behaviour. More than 20% of children with ADHD have set serious fires to communities, more than 30% have engaged in theft, more than 40% drift into early tobacco and alcohol use and more than 25% are expelled from high school because of serious misconduct (Barkley, 2000, p.21).

These figures are representative of studies conducted in the United States. ADHD has always been diagnosed more frequently in the United States but it is probably due to the differences in diagnostic practices and if similar diagnostic criteria are used across all countries then the rates of ADHD will be similar as well (Ingersoll, 1998).

2.3 ADHD IN THE SOUTH AFRICAN CONTEXT

Even though there are no precise statistics in South Africa on ADHD, studies suggest that the prevalence rates in this country are similar to that of Western countries (Prithivirajh, 2005). While rates are similar in Western countries, South African schools face greater challenges in dealing with ADHD and other learning disorders as compared to their Western counterparts.

Meeting the special educational needs of all learners is a challenge that most South African educators face. The new education system of South Africa aims to guarantee equal rights to all learners regardless of their diverse needs with the introduction of the inclusive education policy.

Inclusive education is fundamentally concerned with the right of every learner to personal, social and intellectual development and in order to do this, educational systems should be intended to take wide diversities into consideration and learners with learning needs should have access to high quality and appropriate education (O'Reagan, 2005). However, meeting the diverse needs comes with several challenges for South African educators. These include inflexible curricula, inadequate provision of support services, the lack of teacher skills and the lack of resources. The failure of government to improve the conditions within which reforms have to take place is one of the problems that schools are faced with (Engelbrecht & Green, 2007). Therefore there are a lot of

contextual factors to take into account like poor schools that are under resourced, large number of learners in classrooms and lack of support services.

Education of learners with barriers to learning and development is not the responsibility of educators alone. It is the joint responsibility of educators, parents and the education department. Educators have the responsibility as well of keeping up to date with the latest research and current trends in education. Educators must think of themselves as lifelong learners where learning never stops but is an ongoing process.

2.4 ADHD IN THE SCHOOL CONTEXT

There are various aspects that influence the culture of the classroom such as the physical and social aspects (Donald, Lazarus & Lolwana, 2002). The classroom is a primary site where teaching and learning takes place in a school. Above all, it needs to be a healthy, productive, and inclusive environment for the benefit all students (Donald et al, 2002, p.167). Educators constantly face the challenge of creating a learning environment that is conducive to learning for all learners with different learning needs including learners with ADHD.

Recently more children are being diagnosed with ADHD and much controversy exists about appropriate therapies, medication and management of the disorder (Greenberg & Horn, 1991). While therapies and medication are important in managing ADHD behaviour, the school learning environment plays a vital role in either sustaining desired

behaviour or initiating undesired behaviour. The classroom is a subsystem in a school and is made up of physical and social aspects. The physical aspect include facilities such as the sports ground, the classroom, teaching resources, equipment and materials. The social aspect refers to the culture of the school and interpersonal relations within the different sectors of the school (Donald, et al, 2002).

The behaviour of ADHD learners is usually characterised by being forgetful, absentminded and disorganized and they have a tendency to engage in other off-task activities other than the one that is expected of them (Ingersoll, 1998). Thus, the physical structure and organization are of vital importance. A combination of strategies can be used to meet the needs of the classroom. An important consideration is the seating arrangements and this should ensure decreased distractibility and inappropriate interactions (Umansky & Smalley, 1994). Other aspects that need to be considered include setting clear rules, providing precise instructions and organising materials (Ingersoll, 1998).

Social interactions are continually taking place in a classroom. The social aspects of the classroom include interactions between the educator and learners and between learners and learners. Donald et al (2002), state that in order to manage the class effectively, the teacher needs to understand group dynamics. Group dynamics refers to the interpersonal interactions that take place between people. The social aspects of the classroom include interactions between the educator and learners, and between learners. ADHD learners often have serious difficulties interacting with other learners, sometimes, they are totally

ignored by their peers or they are disliked, rejected or ridiculed (Ingersoll, 1998). These interactions impact on the behavior of the social actors which in this study are the ADHD learner, peers and the educator (Donald et al, 2002).

This study explores the impact of the physical environment and social interactions on the behaviour of five learners with ADHD in the primary school – from an educator’s point of view.

2.5 THE DIAGNOSIS AND SYMPTOMS OF ATTENTION DEFICIT/HYPERACTIVITY DISORDER

A common set of criteria for diagnosing ADHD are provided by the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) published by the American Psychiatric Association. The symptoms can be grouped into two categories namely inattention and hyperactivity-impulsivity. It is clearly specified in the DSM-IV that symptoms must be present prior to the age of seven, must persist for a minimum of six months, must pose a problem in two or more settings. There must be a significant impairment in social, academic or occupational functioning (Ingersoll, 1998).

According to the DSM -IV (cited in Kaplan & Sadock, 1995, p. 2296), the symptoms for inattention are as follows:

- Often fails to give close attention to details or makes careless mistakes in schoolwork, work or other activities.
- Often has difficulty sustaining attention in tasks or play activities.
- Often does not seem to listen when spoken to directly.
- Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace.
- Often has difficulty organizing tasks and activities.
- Often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework).
- Often loses things necessary for tasks or activities (e.g toys, school assignments, pencils, books or tools).
- Is often easily distracted by extraneous stimuli.
- Is often forgetful in daily activities.

The DSM – IV (1994) state that the symptoms for hyperactivity-impulsivity are as follows:

- Often fidgets with hands or feet or squirms in seat.
- Often leave seat in classroom or in other situations in which remaining seated in expected.
- Often runs about or climbs excessively in situations.
- Often has difficulty playing or engaging in leisure activities.
- Is often “on the go” or often acts as if “driven by a motor.”

- Often blurts out answers before questions have been completed.
- Often has difficulty awaiting turn.
- Often interrupts or intrudes on others (e.g butts into conversations and games)

2.6 TYPES OF ADHD

The DSM-IV outlines three types of ADHD namely inattentive, hyperactive/impulsive and combined type. The following is a brief description of each type.

2.6.1 INATTENTIVE TYPE:

These children have attention deficit disorder without the hyperactivity. Ingersoll (1998), describes these children as sluggish, absentminded daydreamers, socially withdrawn and according to Strong and O’Flanagan (2005), these children find it difficult to focus and they are unable to concentrate however they are able to keep still. Children with this type will also find it difficult to follow through on requests or instructions (Mash & Wolfe, 2005, p.112). According to Rief (2005), educators often fail to notice these learners because they do not show signs of disruptive behaviour. Rief (2005) further emphasises that these inattentive symptoms tends to impact on academic performance and achievement.

2.6.2 HYPERACTIVE/IMPULSIVE TYPE:

These children are excessively active, struggle to keep still, fidget, squirm and run around aimlessly. They have poor social relationships and according to Kewley (1999), social skills worsen and this negatively affects self-esteem. Strong and O'Flanagan (2005), states that learners with ADHD have much difficulty considering consequences prior to doing or saying something. According to Rief (2005,p.7) these behaviours may be normal in children at different ages to a certain degree, however in those that have ADHD, the behaviours far exceed that which is normal developmentally.

2.6.3 COMBINED TYPE:

This is the most common type of ADHD. These children have symptoms of inattention and hyperactivity/impulsivity. According to Stordy and Nicholl (2002), a diagnosis of the combined type of ADHD can be made if there are six or more symptoms of inattention and six or more symptoms of hyperactivity/impulsivity. These symptoms must also persist for at least six months.

2.7 THE CAUSES OF ADHD

There are a number of possible causes to ADHD. Most of them belong to one of the four broad categories:

2.7.1 GENETICS

Ingersoll (1998, p.74) reports that parents of ADHD children are most likely to describe their children as a “chip of the old block” or “he’s just like me when I was his age” and it is estimated that anywhere from eleven to thirty-eight percent of ADHD children have mothers who have ADHD and seventeen to forty-four percent have fathers who have ADHD (ibid, p.75)

Some studies suggest that parents of children with ADHD are most likely to have had attention and impulse control problems when they were children (Greenberg & Horn, 1991, p.13). According to Picton (2002), it is being increasingly accepted that hyperactivity is a genetic condition which is passed from generation to generation. Ingersoll (1998) suggests that genetic factors might also explain the increase in the number of people diagnosed with ADHD in the recent years and this could be through:

- Assortative mating: This is the inclination for people to select partners which are exactly like themselves and that would imply a heavy genetic loading for ADHD.
- Anticipation phenomenon: This is the tendency for inherited disorders to show up earlier with more severe symptoms in each successive generation.

In 1999, a study was carried out at the Washington University School of Medicine in St. Louis, Missouri and the report of this investigation indicated the incidence of ADHD in

2600 twins. Identical twins displayed the same class of ADHD symptoms about 80% of the time. The studies with the twins indicate the genetic connection to ADHD (Stordy & Nicholl, 2002).

2.7.2 BRAIN MALFUNCTION:

The frontal lobes are a part of the brain that is involved in the regulation of behaviour and intellectual activities. The Photon Emission Tomography (PET) scans of ADHD children have shown the underactivity of the frontal lobes, therefore, there is a lack of control of the higher centres of the brain associated with impulse control, memory, the ability to pay attention and reasoning with respect to the consequences of actions (Picton, 2002, p.10).

Studies show that children with ADHD had to some extent smaller areas of the brain matter in the right frontal region that control children. Furthermore, the corpus callosum (which is a large band of nerve fibres that connects the right and left sides of the brain, allowing them to share information) was smaller in children with ADHD than in children without ADHD (Barkley, 2000). An example of this is in a classroom situation. When this area of the frontal lobe is functioning normally, a child can easily pay attention to the teacher, concentrate on the work in front of him, or focus on the announcement he hears over the loudspeaker. However, when this part of the brain is not functioning, all incoming information tends to compete on an equal basis, for example, a nearby child shuffling papers at his seat, a truck rumbling by outside the window or the smells of

lunch being prepared down the hall – all receive the same attention by the brain (Umansky & Smalley, 1994, p.57).

Neurotransmitters are chemicals in the brain that permit nerve cells to transmit information to other nerve cells are deficient in those that have ADHD (Barkley, 2000, p.66). According to Wender (1987, p.29-30), the deficiency of neurotransmitters results in a decreased ability to focus attention; a decreased ability to check one's behaviour – to apply brakes; a decreased sensitivity to other's reactions (to do's and don'ts) and approval or disapproval; and a decreased ability to modulate mood, that is, an increased tendency toward sudden and dramatic mood changes.

2.7.3 ENVIRONMENTAL CAUSES

The environment has a vital role to play and poor environmental conditions (physical and emotional) can cause symptoms of hyperactivity and these conditions can aggravate a child who has mild ADHD to demonstrate very severe symptoms (Picton, 2002). Toxic substances (for example, lead) have been known to lead to neurological damage, irritability, nausea, fatigue and loss of appetite (Ingersoll, 1998). Toxic fumes of any sort are detrimental to one's health. We all should be conscious of possible health problems that come with living in a city. The air we breathe in is often contaminated with fumes from car exhausts and children who are exposed to this are certainly at risk.

According to Wender (1987), it is a possibility that children simply living in high trafficked areas and constantly breathing in fumes from cars can be poisoned by lead and this could cause learning and attention deficits. There is some association between hyperactivity, an inability to concentrate and the increased lead levels in the blood (Train, 1996, p.51). Barkley (2000) adds that moderate to high levels of lead causes injury to brain tissue and that there is scientific evidence proving that high levels of lead in children may be associated with hyperactivity and inattentive behaviour.

The consumption of nicotine and alcohol during pregnancy is also linked to attention, behaviour and learning problems and this is seen in children with fetal alcohol syndrome (Rief, 2005). A study conducted in 1992 found that direct exposure to cigarette smoking during pregnancy as well as indirect exposure after pregnancy increased the odds of behaviour problems in the children of these pregnancies and the amount of alcohol consumed to directly related to the degree of risk for inattention and hyperactivity (Barkley, 2000).

2.7.4 FOOD ADDITIVES/ALLERGIES

Food additives and allergies were once thought to account for all the symptoms of ADHD. It was alleged that through special diets, the symptoms off ADHD could be controlled. This theory was first proposed by Dr. Benjamin Feingold. However, recent evidence shows that only five percent of all children diagnosed with ADHD show a reaction to food additives and dyes (Flick, 1996). The food that we take into our bodies

should affect the chemicals in our bodies and possibly the way in which we behave. While experts are reluctant to agree with this, most parents believe wholeheartedly in food allergy theory and are convinced that their child's diet does alter his behaviour (Train, 1996, p.49). Train (1996, p.50-51) further accentuate that dietary approaches provide parents with something tangible to do and there is still no conclusive scientific evidence that ADHD is an allergic reaction to food.

It is possible that such additives could worsen the behavioural symptoms of ADHD and Greenberg and Horn (1991, p.13) provide an analogy to further clarify this:

Suppose you have a car with a faulty carburetor. If you put the wrong kind of gasoline in the car, it will function even more poorly than if you had put the right kind of gasoline. However, the underlying reason the car does not run properly is that the carburetor is faulty. Thus, although the right gasoline will make the car run better, it will not solve the difficulty with the carburetor. Only when you repair the carburetor will the car perform as it should. Likewise if you give the child with ADHD food additives or refined sugars, the child may display an increase in ADHD-related behaviours. But this will necessarily mean that the food additives or refined sugars caused the ADHD; rather, it could simply aggravate an already difficult problem.

2.8 ASSESSMENT OF ADHD

Parents and teachers have an imperative responsibility of being aware of the existence of ADHD in learners. Teachers can observe if a learner is constantly disruptive, has poor concentration and easily distracted then it could be a case of possible ADHD. The assessment must be initiated by a medical practitioner who will then make a referral. This is important to ensure that there is no other contributory medical factor in need of attention (Picton, 2002). This must be followed by a comprehensive assessment and according to Kewley (1999), this is important because ADHD can be mistaken for other disorders and it is essential to find out how much difficulty is being caused.

The assessment comprises of three main components namely the family interview, the educational psychology assessment and the evaluation of rating scales and information from schools (Kewley, 1999, p.87).

The family interview should provide the professional with a history of the child, for example, the health of the parents before and after conception, details of the pregnancy, birth problems, illnesses, injuries, childhood traumas such as a frightful event or separation from his parents (Picton, 2002, p. 26). Rief (2005) emphasises that obtaining a thorough history is a critical component of the diagnostic process. Kewley (1999) suggests that the interview process should entail separate interviews for the child and parents as certain things are best discussed separately. Information about core ADHD symptoms and the parents perceived view of the impact, learning difficulties and

organizational skills, evidence of co-ordination, handwriting problems, social interaction and other possible complicating factors are obtained from the interview (Ibid, 1999, p.83).

Children are usually referred to an educational psychologist for an evaluation. This is important and extremely useful as the child's academic potential is established, and possible strengths, weaknesses and learning difficulties are determined (Kewley, 1999, p.84). The educational psychologist does this by conducting tests which could include storytelling, drawing and play therapy.

Rating scales are designed to rate the child's behaviour, concentration, social skills and mood swings and assists in the accurate evaluation of ADHD. Rating scales list a number of items that the teacher or parents rates according to the frequency they observe the child exhibiting those specific behaviours and problems (Rief, 2005, p. 25). One such rating scale is the Conners Rating Scale. The Conners Rating Scale is specific to DSM-IV defined ADHD and takes into account age and gender and both parent and educator forms are available in full. The advantage of the Conners Rating Scale is that it has multiple informant forms which allow for a thorough assessment and abbreviated versions facilitate treatment monitoring. A disadvantage of the Conners Rating Scale is that the full form is lengthy to administer thus restricting its use in some research protocols and could be a predicament if informants have literacy problems (Fitzgerald, Bellgrove & Gill, 2007, p.26)

It is imperative to receive as much feedback from those who are in constant interaction the child with ADHD. Educators have the primary responsibility with rating scales as most ADHD symptoms show readily in the school environment (Kewley, 1999).

2.9 MANAGEMENT OF ADHD: A MULTI-MODAL APPROACH

Children with attention deficit disorders are like diamonds in the rough: It takes special care and time for them to dazzle. (Boyles & Contadino, 1996 cited in Stordy & Nicholl, 2002:21)

ADHD must be recognized and treated accordingly. Green and Chee (1994) states that poorly managed ADHD can lead to more serious and long term problems like:

- Children with undiagnosed ADHD can feel inferior
- Academic and social failure leads to poor-self esteem
- Children will lose their drive to succeed and the will to learn
- Family relationships will be affected due to the stresses of living with an ADHD child.
- The child will enter adulthood badly educated, socially inept and lacking confidence.

According to Green and Chee (1994), the educator can arrange for an educational psychologist to test intellect, questionnaires have been created to allow teachers and

parents rate behaviours, specialized assessments can also test attention, memory, impulsivity and distractibility.

According to Kewley (1999) many professionals, who have knowledge and expertise in managing learners with ADHD would recommend the use of medication as well as other strategies to effectively manage ADHD. This is known as a multi-modal approach and it should be tailored according to individual needs. The multi-modal approach can comprise of medical, behavioural/psychosocial and educational interventions (Rief, 2005).

2.9.1 MEDICAL MANAGEMENT

An Optic View of ADD

If corrective lenses did not exist

No well-meaning parent could hope to resist

A pill that enabled their child to see

And increase that child's ability

For better sight and clear vision

No, this would not be a tough decision.

Then why wouldn't the same analogy

Apply to the problem of ADD

For brains are a lot like eyes, I believe...

They both need to focus on order to see!

Medication as treatment might be prevented

If ADD lenses were someday invented.

(Karen Easter, 1996 cited in Rief, 2005, p.35)

Psycho-stimulant medication is the most common form of treatment for ADHD.

Medication used is only meant to control the symptoms of ADHD and not cure it and as Kewley (1999) puts it, it absolutely cannot be compared to antibiotics. Three well known stimulants used to treat ADHD are Ritalin, Dexedrine and Cylert. Of the three mentioned above, Ritalin is the most common mainly because it has a high success rate and a long history of use (Umansky & Smalley, 1994). These stimulants are internationally recognized and are aimed to help the child focus attention and to control his activity level. According to Ingersoll (1998), stimulant medication is quite effective and one should expect to notice the following changes:

- reductions in hyperactive, impulsive behaviour
- improved attention and organization
- better tolerance for frustration
- improved relationships with peer and family
- improvements in language
- enhanced academic achievement
- better self-esteem

Like all medication, one should always be aware of side effects, which usually occur at the start of the treatment, are mild in nature and diminish rapidly (Ingersoll, 1998, p. 88).

Common side -effects are poor appetite and insomnia however, if the child is started on a

higher dose without being introduced to it gradually then other side effects such as headaches, stomachaches and dizziness can be expected (Ingersoll, 1998). Barkley (2000) adds that there is a possibility that the child's heart rate, blood pressure and brain electrical activity can be increased while taking stimulant medication for ADHD as well as the possibility of nervous tics. Rief (2005) defines tics as an involuntary motor movement such as blinking, shrugging and clearing of the throat.

Much controversy still exists about the use and abuse of psycho-stimulant medication for children diagnosed with ADHD. This is mainly due to media sensationalism and public controversy (Rief, 2005). Therefore, the information portrayed in newspapers and magazines makes it difficult for parents to make an informed decision and therefore are skeptical to try a treatment program that will improve the symptoms.

Parents are also concerned that medication will be addictive. However, according to Johnston (1991) Ritalin is not addictive and does not produce euphoria thus children cannot get hooked on it. The medication is short-lived, remaining in the body for only four or five hours at a time and there is no buildup or physical dependence (Johnston, 1991, p.127).

2.9.2 THE LEARNING ENVIRONMENT

A regulated and structured environment will restrict any child and as the environment gets tedious and boring for these children, they create their own stimulation, thus

becoming distracting and annoying to others (Neuville, 1995, p.117). Furthermore, Neuville (1995) accentuates that any structured social situation almost guarantees conflict between a child with ADHD and others.

School presents very high demands for self-control that learners with ADHD are unsuccessful in following instructions, working independently and abiding by classroom rules (Ingersoll, 1998). ADHD learners have the potential to impact on class dynamics in terms of teacher time and social interactions, therefore, ADHD will affect either directly or indirectly every child in the classroom (O'Reagan, 2005).

In a school environment, children learn social concepts over and above academic ones (Neuville, 1995). Children with ADHD manifest interpersonal behaviour that has several distinct characteristics: a considerable resistance to social demands, a resistance to “do’s” and “don’ts” and “shoulds” and “shouldn’ts”; increased independence; and domineering behaviour with other children (Wender, 1987, p. 19). Ingersoll (1998), states that not many learners with ADHD have the good fortune of making and keeping friends and explains further that children with inattentive type ADHD have a shy and conservative nature which forms a barrier to forming friendships. However, for the hyperactive-impulsive ADHD child, their bossy, intrusive, aggressive mannerisms can be a possible obstacle in forming friendships. A simple example of this is when an ADHD learner wants to play with friends, he will decide what game the group will be playing, what the rules are and if they are not playing it his/her way then he/she will quit. This could result in driving other children away and losing friends.

Ingersoll (1998, p.14) refers to children with ADHD as 'social outcasts' who are constantly rejected and ignored by their peers and Neuville (1991) states that children with ADHD do not seem to care about the effects they have on others and often don't understand why their classmates avoid or turn away from them. Therefore, they are not equipping themselves with vital and critical life skills as cooperation, negotiation and how to settle disputes (Ingersoll, 1998, p.44).

Initially, learners with ADHD can appear amusing and very entertaining to their peers but according to O'Reagan (2005, p.61), this 'class clown' effect soon wears thin and is rapidly replaced by impatience and intolerance of the constant interruptions that may often take place. In playing with other children, opportunities arise for children to learn the unstated rules for interaction. If the ADHD learner is ignored or rejected by other children, then they are missing out on important learning experiences that will prepare one for later life and poor peer relationships not only cause emotional pain and suffering during childhood, they are red flags that signal a risk for serious difficulties in later life (Ingersoll, 1998, p.44).

2.9.3 THE ROLE OF EDUCATORS

Educators share in the key responsibility for the day to day management of ADHD learners and the school is the environment for a large component of his or her life thus the school ethos is crucial to the success of managing these children (Kewley, 1999).

School presents very high demands for self-control that learners with ADHD are unsuccessful in following instructions, working independently and abiding by classroom rules (Ingersoll, 1998). They are also often disorganized and have difficulties with time management (Kewley, 1999, p.148).

Children with ADHD can make educators feel frustrated, demoralized, inadequate and unrewarded (Kewley, 1999). Thus, it is imperative to implement individual and classroom strategies to minimize features and complications of ADHD symptoms. The following strategies aim to minimise the intensity of ADHD behaviour.

2.9.3.1 RELATIONSHIP BETWEEN THE CHILD WITH ADHD AND THE EDUCATOR

The essence of a good teacher is her belief in the ability of her pupils to succeed.

(Estelle McIlrath cited in Picton, 2002, p. 111)

As an educator, there is a need to understand the theory of natural variation. Train (1996) explains further that educators should accept the uniqueness of each individual learner. Each learner is different in terms of intelligence, physical build, co-ordination and temperament. If an educator fails to understand this concept, it could lead to disappointment and frustration. Train (1996, p.151) articulates the following:

If you accept that we all exist on a curve, with no two people occupying the same position, and that our places on the curve may change not only according to our various attributes, but in relation to the circumstances around us, then you may be able to begin by accepting each and every child for what he/she is.

In order to be effective educators of children, educators need to firstly understand that the relationship with the child is the single most powerful agent of change available to them (Ingersoll, 1998, p. 176). It is absolutely imperative that the educator takes the responsibility of being informed about ADHD. Research shows that most educators have a poor grasp of the nature, course, outcome and causes of this disorder (Barkley, 2000, p. 233).

It is almost impossible for a child with ADHD to succeed without the understanding and flexibility of the educator. It is important for the educator to be supportive and consistent in order for the child to relate to her. There should be an understanding between them and Picton (2002) suggests that secret codes could be established to remind the child of preferred behaviour, for example, if the child starts to fidget too much, the teacher could put her hand on his shoulder or reposition his pencil to remind him to settle down.

The child with ADHD should also sit in close proximity to the educator's desk to ensure that the teacher is proactive in managing behaviour. This is helpful for the reason that if the child is distracted or does not understand work, the teacher is close enough to intervene without the rest of the class being disrupted (Kewley, 1999).

If the ADHD learner is having a good day without any major behaviour and inattention complications, or has achieved something, then Picton (2002) suggests these rewards:

- send the child take a message to another teacher or to the office;
- allow him to stand first in line;
- ask him to help tidy up the class after school;
- allow him to listen to music or read to the class;
- reward him with a sticker or a gold star.

Educators should always reward and acknowledge preferred behaviour and respond negatively to undesirable and unacceptable behaviour by some form of deprivation or taking away of rewards or punishment.

2.9.3.2 PREFERENTIAL SEATING

The correct positioning in the classroom can make a substantial difference to the behaviour and performance of the learner with ADHD. The learner with ADHD can sit next to a child who will be a good role model, can tolerate him and should be someone who will prompt him and check homework.

Recent research shows that the traditional desk arrangement in rows facing the front of the classroom is better than for children than them sitting in groups, especially if they are facing each other while working as this creates too much distraction and too much opportunity for social interaction (Barkley, 2000). According to Barkley (2000),

classrooms that are physically enclosed (four walls and a door) are also more beneficial than open plan classrooms as the latter are usually noisier (Barkley, 2000). Seating of the ADHD learner should also be away from doorways and high-traffic areas (Ingersoll, 1998).

2.9.3.3 TEACHING THE CHILD ORGANISATIONAL SKILLS

Poor organisational skills is an hallmark for ADHD learners as much as muscular weakness is with orthopedic conditions and while the orthopedically handicapped child receives physical therapy to strengthen his weak muscles, we would never assume that after one course the child could cast aside his crutches and leap from his wheelchair and stride across the classroom. Rather, we will continue to provide the best support the child needed to function at his best in the classroom (Ingersoll, 1998, p.180).

It takes a child with ADHD much longer to learn organisational skills than other learners. The lack of organisational skills hampers learning (Neuville, 1995) and Umansky and Smalley (1994) suggest a few ways that teachers can assist the ADHD with organising and completing work.

- Worksheets or tasks can be numbered so that the child does not waste time deciding which one to do first but rather completes it in numerical order.

- The teacher could give the child one worksheet at a time and when the teacher is pleased or satisfied with the work done, the next worksheet can be given to the child.
- The learner can keep an individual list of things to complete and he/ she can tick them off as each task is completed.
- A timer can be utilized and set for a reasonable amount of time for the child to finish a given task. The visual and audible reminder will help the child work quickly and efficiently.

The above suggestions will introduce structure which is central in the treatment of ADHD. Hallowell and Ratey (1995, p.221) define structure as a set of external controls that one sets up to compensate for unreliable internal controls. The keeping of lists, schedules, filing systems reminders and notepads contribute to a good structure.

Think of a thermometer and the mercury it contains. If you have ever broken a thermometer, you know what happens to the mercury. The ADD mind is like spilled mercury, running and beading. Structure is the vessel needed to contain the mercury of the ADD mind, to keep it from being here and there and everywhere all at once. Structure allows the ADD mind to be put to better use, rather than dissipating itself like so many beads of mercury on the floor (Hallowell & Ratey, 1995, p.221).

2.9.3.4 THE NATURE OF LESSONS AND TASKS

The attention of ADHD learners is easily captured by novelty and movement – anything new or different – and drops off dramatically with repetition and familiarity (Ingersoll, 1998, p.184). Tasks, activities and materials should be varied for increased stimulation by using colour, shape and texture and according to Barkley (2000), this will reduce disruptive behaviour, enhance attention and improve overall performance. Barkley (2000), offers the following suggestions which are likely to assist educators when designing lessons and making additional changes to classroom structure and curriculum:

- Educators should vary their style of presenting lessons in order to maintain the interest and motivation of children. Passive tasks and active tasks must be interspersed to maximise attention and concentration. Active tasks will allow learners with ADHD to channel their energy into constructive responses.
- Educators must keep academic tasks brief and the rule of thumb is the amount of work that would be appropriate for a child 30% younger.
- The delivering of lessons should be in an enthusiastic yet focused manner. The educator should be vibrant, energetic and animated in her delivery and this technique will make certain that the attention is on the teacher.
- Brief moments of physical exercise during classroom lessons or activities will be beneficial to learners with ADHD as this will reduce the fatigue and monotony that they may experience. This could be in the form of a brief walk around

outside or inside the classroom or jumping jacks at their place. Exercise will revitalise, refresh and invigorate not only the learner with ADHD but all learners.

- Due to the attention of the learner with ADHD waning as the day progresses, it is advised that the more difficult subjects be scheduled for the morning and the non-academic subjects in the afternoon.
- Classroom directives should be supplemented with direct instruction materials, for instance, drills of important academic skills.

2.9.3.5 MONITORING MEDICATION

Educators share in the vital responsibility in observing the child with regards to the effects of medication. It is imperative that educators remember the dosage, times to be administered, the different rates that children metabolise medication and that they might experience side effects (Rief, 2005).

Rief (2005) maintains that educators monitor learners on medication and report any changes in:

- academic performance
- work production
- ability to stay on task
- behaviour
- relationships
- any possible side effects the child might be experiencing.

This feedback is necessary to determine if the medication has the desired effect on symptoms and if not then the dosage can be corrected. Only a psychologist or medical practitioner can recommend the change of regimen or dosage.

2.9.3.6 REWARDS, PUNISHMENTS AND FEEDBACK

All children benefit from the combination of positive and negative feedback however most teachers are guilty of being stingy with positive reinforcement and praise and too generous with criticism (Ingersoll, 1998). Kewley (1999) encourages immediate and frequent feedback as well as paying no attention to minor misbehaviour and this will enable the child with ADHD to feel motivated and inspired and not defeated. Motivating rewards can be in the form of access to privileges and/or responsibility. Educators should also acknowledge effort and minimize attention to their weaknesses and highlight areas of competence (Kewley, 1999).

When punishing the child, educators should be cautious and use suitable reprimands rather than appearing stressed and ridiculing in front of the whole class. If the child with ADHD has made a mistake, the educator is responsible to teach the child how to use the mistake in a positive way for future learning (Kewley, 1999).

2.6.3.7 PROTECTING AND ENHANCING SELF-ESTEEM

The way a child feels about himself is reflected in the look on his face, his body language, his motivation to participate in various activities, and the things he says ... often this is related to the feelings of inadequacy and fear of more failure (Umansky & Smalley, 1994, p.18)

A crucial goal of effective management is protecting and enhancing the child's self-esteem. Self-esteem is fragile for a person with ADHD because the symptoms make the person feel as if he or she cannot control behaviours. A person with low self-esteem has no belief in his or her ability and is often afraid of failing (Strong & Flanagan, 2005,p.221). By enhancing a child's self-esteem, educators are helping the child to feel significant, that he/she is valued within a group. Educators also have the responsibility to clarify that it is the misbehaviour, not the child, that is unacceptable. Educators can also find ways to enhance the child's self-esteem by assisting the child in discovering activities that he/she, too can excel and ones which the child with ADHD cannot be easily compared to other family members or the circle of friends (Kewley, 1999).

The following chapter, **Chapter three**, presents the theoretical frameworks that are relevant for this study.

CHAPTER 3

THEORETICAL FRAMEWORK

This study is located within three theories: Bronfenbrenner's ecological systems theory, Bandura's social cognitive theory and Bertalanffy's system's theory.

3.1 ECOLOGICAL SYSTEMS THEORY

Studies have been conducted on understanding how the social environment shapes the development of children (Donald, Lazarus & Lolwana, 2002). Urie Bronfenbrenner is one theorist who has contributed to this body of knowledge using the ecological systems theory. He emphasises the importance of understanding development in terms of the interactions in the social environment. According to Berger (1980), Bronfenbrenner's theory takes into consideration interactions between all living things and their physical environment as well as the interactions of human beings.

Inherent in Bronfenbrenner's model of child development are four interacting dimensions that must be considered in understanding child development (Donald et al, 2002:51).

These are:

- person factors (temperament of the child)
- process factors(forms of interaction)
- contexts (schools)

- time (change over time in the child or in the environment)

Bukatko and Daehler (2001) indicate that according to Bronfenbrenner's theory the child's biological and psychological composition is at the core of the model and is continually affected and modified by the physical and social environment. These interactions occur in the immediate setting between the person and the environment, such as peers in the classroom. The size and design of the classroom affects this interaction. This is referred to as the microsystem. There are other interactions and interrelationships among various other settings, such as the school, church and the home. This system is referred to as the mesosystem. The third system is called the exosystem and includes the social, political economic conditions which influence the structure of the microsystem. The fourth system is the macrosystem and this encompasses the general beliefs and attitudes of society on these systems which are affected by changes over time (chronosystem).

The ecological systems theory will inform this study by providing a framework when researching the physical aspect of the learning environment which is referred to by Bronfenbrenner as the microsystem (Donald et al, 2002). Interactions within the various systems (mesosystem) are also a focus of study and thus the ecological systems theory is used to frame this study.

3.2 ALBERT BANDURA'S SOCIAL LEARNING THEORY

Albert Bandura, a social learning theorist believes that the environment plays a vital role in shaping behaviour. Most of the social learning occurs by direct observation of others in daily situations (Bandura, 1977). Behaviour analysts believe that while biological and genetic factors play a role in predisposing behaviour, it is the environmental factors that influence behaviour. This is referred to as the nature/nurture theme (Bukatko & Daehler, 2001). Another theme in social cognitive theory is socio-cultural influence which stipulates that although societies differ in viewing certain behaviour as desirable or unacceptable, the mechanisms for learning is the same (Bukatko & Daehler, 2001, p.13). Rewards and punishment delivered in an environment are a means for understanding development. According to Bukatko and Daehler (2001), the third theme in social cognitive theory is continuity/discontinuity, which emphasises that if development is continuous then any deviation from a set pattern will stem from shifts in environmental circumstances.

Another aspect of social cognitive theory is modelling/observing or imitation learning behaviour (Mwamwenda, 2004). Modeling occurs when another person sees another person engaged in a certain behaviour and perceives it as an interesting and rewarding one, behaves in a similar manner with the hope of being reinforced in a similar fashion (Mwamwenda, 2004, p.87). Thus, children model behaviour by observing their teachers, peers and friends. Most behavior is therefore formed on the foundation of observation of

what other people do and their consequences of that behaviour. This will inform this study by taking into account the interactions between the ADHD learner and their peers, the ADHD learner and the teacher and the effects of these interactions.

According to Bandura, behaviour is largely shaped by our environment, behaviour can affect the environment, which in turn can affect our cognitions, which in turn affects behaviour. This is called reciprocal determinism (Bandura, 1977). This is a two-way influence process, the environment is influenceable, as is the behaviour it regulates (Bandura,1977, p.195). This concept of reciprocal determinism will inform this study by observing classroom interactions and the effects of those interactions on the social actors, which are in this study, the teacher, the ADHD learner and the peers.

3.3 SYSTEMS THEORY

Before divulging the basic concepts of the systems theory, it is important to define the word system. According to Prochaska and Norcross (2003, p.375), a system is defined as a set of units or elements that stand in some consistent relationship with one another. A system comprises of both the separate elements as well as the relationships among the elements. The systems theory was first proposed by Ludwig von Bertalanffy and offers a set of assumptions regarding the maintenance of any organism or entity as a result of the complex interaction of its elements or parts (Goldenberg & Goldenberg, 2004, p.70). The systems theory focuses on the relationships between elements within the system rather than each part in isolation.

To provide a simple but effective example of this theory, one can use a biological analogy. The regulation of body temperature involves the interaction between the sweat glands and perspiration, physical activity, breathing rate and control mechanisms in the brain. These components act together to maintain the temperature of the body (Dallos & Draper, 2005). This example can be used to introduce the concept of wholeness in the systems theory which maintains that the elements are combined in a consistent pattern and the entity produced is greater than of all parts combined (Prochaska & Norcross, 2003).

The biological analogy provided above can also be used to explain the concept of circularities which emphasizes the ongoing interactions between the various elements. Each part is connected so that one part influences and is influenced by the other part. The same principle applies in the learning environment as each person is seen as influencing another person or persons and their responses in turn influence them.

According to Prochaska and Norcross (2003), in order for any system to function effectively, methods of controlling and maintaining organisation are required and therefore there must be some kind of stability or balance within systems. This is another important concept of the systems theory and is called homeostasis, which emphasizes the need for a balance and stability in living systems. However, this does not necessarily mean that behaviour must be structured or rigid but the elements relate to each other because of control mechanisms which allow for dynamic interaction between the elements.

Boundaries within a system are also a concept in the systems theory and highlights relationships among the various elements. The rules of these relationships create boundaries, and these boundaries can be permeable if rules are unclear or, if boundaries are too rigid there will be inadequate interactions among individuals in a system (Prochaska & Norcross, 2003).

The concept of wholeness, circularities, homeostasis and boundaries of the systems theory will inform this study by providing a framework for the interactions that occur between the elements in the classroom, which are in this study, the learner with ADHD, the peers and the educator.

3.4 SUMMARY

These three theoretical frameworks frame this study. However, of the three the ecological systems theory is most relevant as this aims to understand development in terms of interaction with the social and physical environment. The concept of reciprocal determinism is also very relevant as this emphasizes the two-way process between the environment and the behaviour it regulates.

The next chapter, **Chapter 4**, provides information of the type of research method used, sampling, the research site, instruments used, validity and reliability and ethical considerations.

CHAPTER 4

METHODOLOGY

This chapter provides a description of the research method and design used in this study.

4.1 THE PURPOSE OF THIS STUDY

The purpose of this study was to investigate educators' perceptions of the impacts of the physical and social environment of the behaviour of learners diagnosed with ADHD in the primary school. This study aimed to answer the following critical questions:

- What features of the school's physical environment affect the behaviour of learners with ADHD?
- How do the interactions in the classroom affect the behaviour of the learner with ADHD?
- What are the challenges that teachers experience in their interactions with the learner with ADHD?

4.2 TYPE OF STUDY

An interpretive case study approach is used to explore the impacts of the learning environment on the behaviour of ADHD learners. This study provides detailed case studies of five learners with ADHD with a focus on the impacts of the social and physical

environment on their behaviour. Case studies belong to the area of qualitative research and aim to understand social situations through thick rich description (Denzin & Lincoln 1998; Patton, 2002). According to Denzin & Lincoln (1998, p.83),

“It goes beyond mere fact and surface appearances. It presents detail, context, emotion and the webs of social relationships that join persons to one another. Thick description evokes emotionality and self-feelings. It inserts the sequence of events for the person or persons in question. In thick description, the voices, feelings, actions and meanings of interacting individuals are heard.”

As mentioned earlier in chapter one, the advantage of case studies is that it can divulge subtleties as well intricacies of situations and explanations for outcomes. However, a disadvantage of using a case study approach is the extent to which results are generalisable (Bennet, 2003). The researcher chose the case study method because it allows her to observe behaviour in the natural settings and will also be able to use more than one method for data collection otherwise known as multi-method approach.

Bennet (2003) lists various benefits of using a multi-method approach to data collection:

- they permit exploration of both outcomes and processes associated with a new programme;
- they result in improved and enriched findings, yielding greater understanding of what is happening, why it is happening and how it is happening;

- they permit modifications to be made to aspects of the evaluation plan should unanticipated outcomes worthy of further exploration be encountered,
- they generate multiple sources of data which provide checks on the validity and trustworthiness of the findings (p.57, p.60)

4.3 SAMPLING AND CRITERIA

Purposive sampling was used in this study. Purposive sampling is used when the researcher handpicks participants according to desired criteria. Silverman (2000) states, that purposive sampling enables us to select a case because it illustrates some feature or process in which we are interested.

Five educators who had learners diagnosed with ADHD were selected as the research sample. All five educators had worked with learners with ADHD before and had background knowledge. All five educators were teaching in the same school with the researcher and relationships were already built. Each of them identified a learner. All five learners had one thing in common and that is, they were not on any medical treatment, such as Ritalin due to parental choice or skepticism of medication. This will ensure that interactions with the physical and social environment are natural and not hindered or influenced by medication. Patton (2002, p. 244) emphasizes that in-depth information from a small number of people can be very valuable, especially if the cases are information rich.

The sample size also depended on available time and resources and the researcher chose five case studies as this is a manageable size. Due to the researcher being a full time educator, five case studies was an ideal number to handle and to cope with.

4.3.1 DESCRIPTION OF SAMPLE

The sample in this study consisted of five educators who initially filled in a biographical questionnaire (Appendix B). The questionnaires was analysed descriptively.

Frequencies and percentages were calculated for the total sample for all questions in the biographical questionnaire. The following tables and graphs describe the sample of teachers who participated in this study.

Table 4.1 Profile of educators according to age

| Age | Frequency | Percent |
|-------------|------------------|----------------|
| 20-29 years | 1 | 20 |
| 30-39 years | 1 | 20 |
| 40-49 years | 2 | 40 |
| 60-69 years | 1 | 20 |
| Total | 5 | 100 |

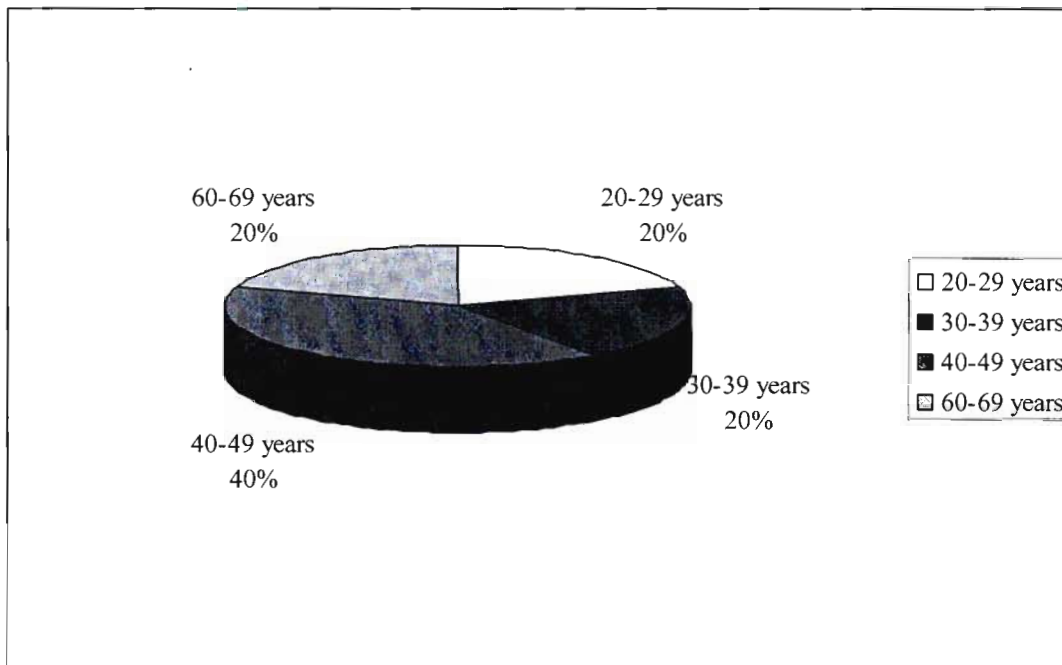


Table 4.1 indicate that 40% of the educators were between the ages of 40-49 years, while an equal number of educators were in the age range 20-29, 30-39 and 60-69.

Table 4.2 Profile of educators according to teaching experience

| Number of years | Frequency | Percent |
|-----------------|-----------|---------|
| 0-10 years | 1 | 20 |
| 11-20 years | 1 | 20 |
| 21-30 years | 2 | 40 |
| 31 + years | 1 | 20 |
| Total | 5 | 100 |

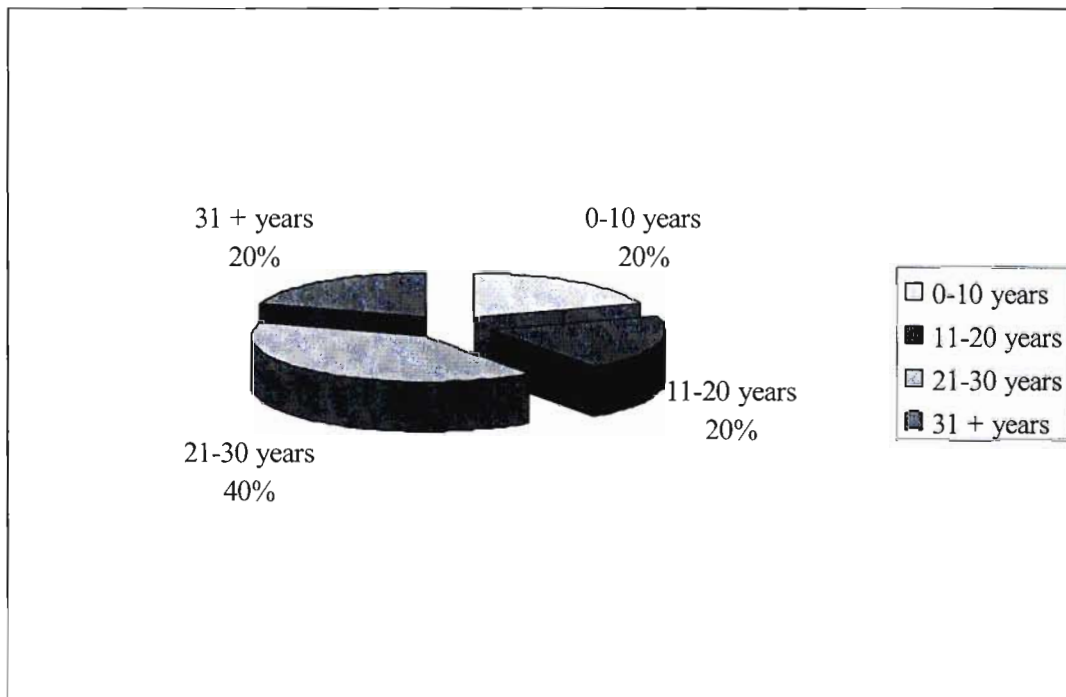


Table 4.2 indicates that 40% of the educators had between 21-30 years of teaching experience, 20% had between 0-10 years teaching experience, 20% had 11 to 20 years of teaching experience and 20 percent had over 31 years of teaching experience.

Table 4.3 Profile of educators according to employment

| Type | Frequency | Percent |
|----------------|-----------|---------|
| Governing body | 2 | 40 |
| Permanent | 3 | 60 |
| Total | 5 | 100 |

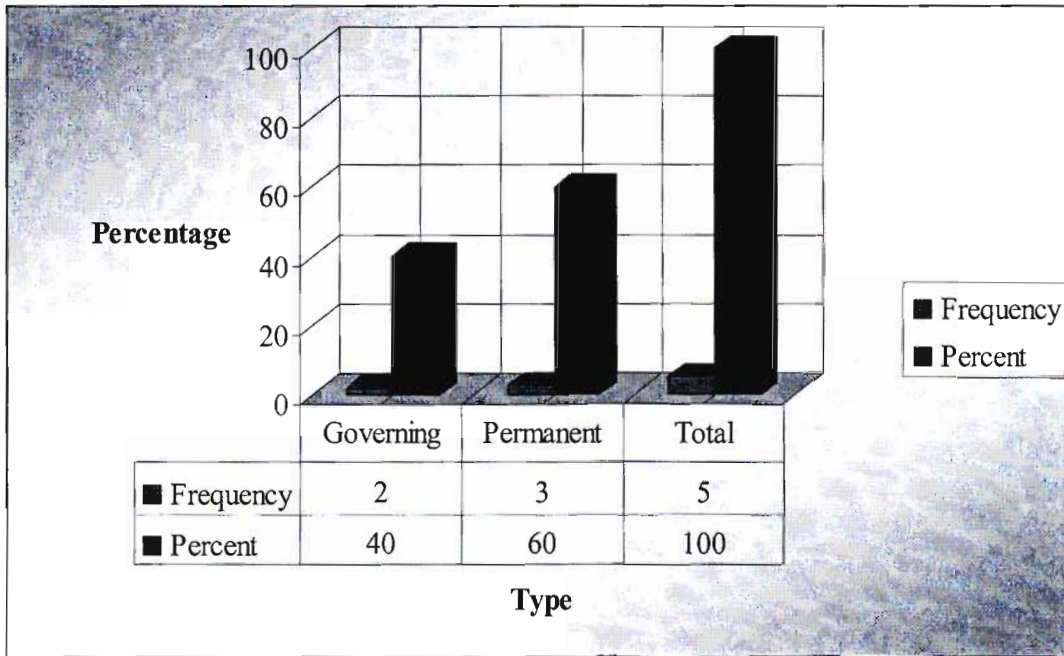


Table 4.3 reflects that 60% of the educators were permanent staff and 40% were employed by the governing body of the school.

Table 4.4 Grade currently taught by educators in the sample

| Type | Frequency | Percent |
|---------|-----------|---------|
| Grade 5 | 3 | 40 |
| Grade 6 | 3 | 60 |
| Total | 5 | 100 |

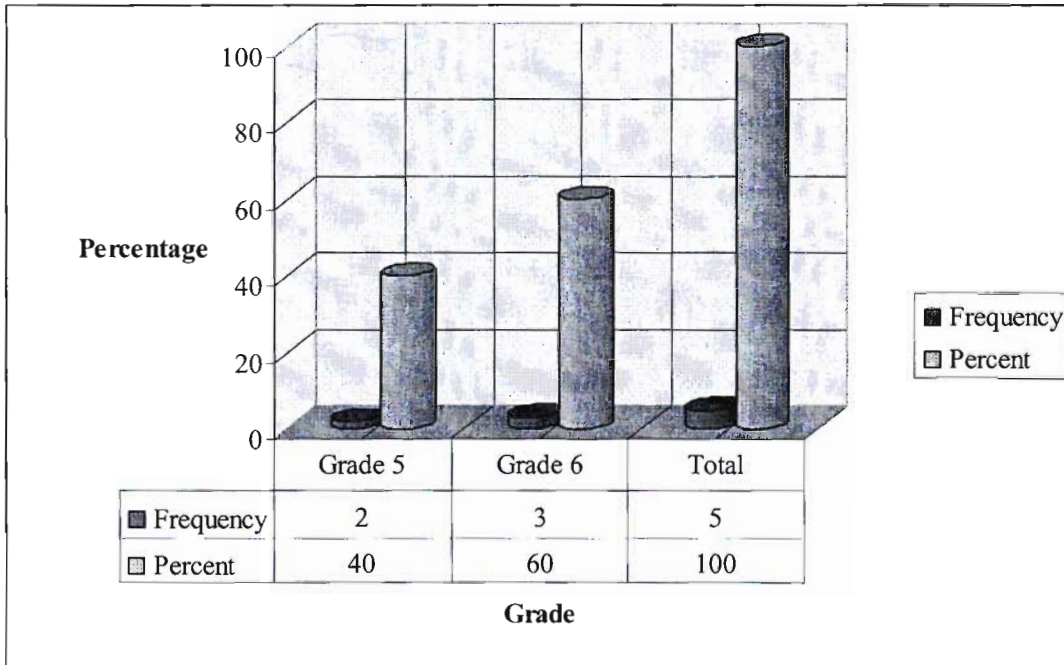
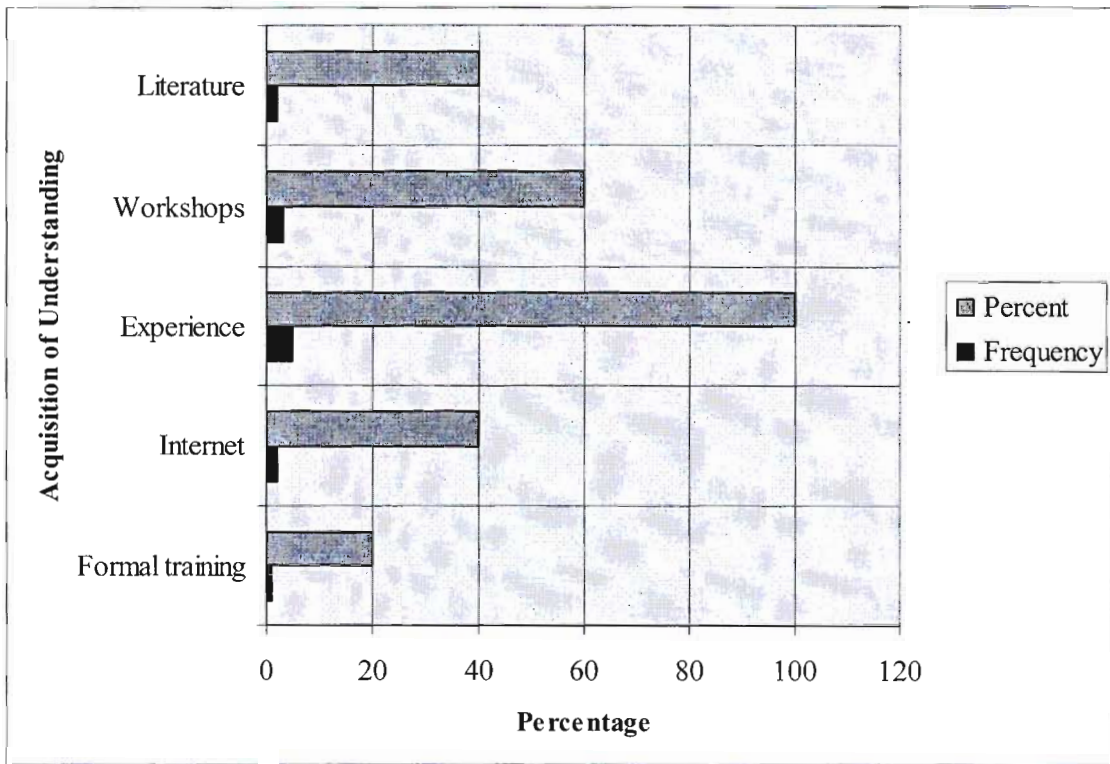


Table 4.4 indicates that 60% of the educators are currently teaching in Grade 6 and 40% is teaching in Grade 5.

Table 4.5 Acquisition of an understanding of ADHD

| | Frequency | Percent |
|-----------------|-----------|---------|
| Formal training | 1 | 20 |
| Internet | 2 | 40 |
| Experience | 5 | 100 |
| Workshops | 3 | 60 |
| Literature | 2 | 40 |



➤ **Respondents may have selected more than one option.**

The biographical data of the five educators who participated in this study were analysed and the results were profiled in Tables 4.1 to 4.5. From the biographical data gathered, it appears that the majority of the educators were over the age of forty. This is significant because it indicates the level of maturity when dealing with learners with ADHD. They are also more likely to possess a wealth of experience.

All of the respondents were female. This is not surprising as not many males are entering the teaching profession. ADHD is predominantly a male disorder and yet there are not enough male educators to assist. Out of the five learners, four were male and one

female. ADHD is four to eight times more common in boys than it is in girls (Umansky & Smalley, 1994, p.xi).

Table 4.2 indicates the 40% of the educators had between 21-30 years of teaching experience while 20% had over 31 years of experience. Thus, it is assumed that these educators have indeed accumulated a vast amount of skills and knowledge in dealing with learning with various learning disorders, including ADHD.

Table 4.3 indicates that 60% of the respondents were on the permanent staff. This could mean that they might have attended workshops that were organized by the KZN-Department of Education, that address issues such as ADHD and other learning disorders.

Table 4.5 indicates that 100% of the educators acquired an understanding of ADHD through experience, 60% through workshops or information that has been disseminated from workshops. It is alarming that only 20% acquired knowledge through formal training. This 20% comprises of the younger respondents. This could be due to that recently more information becoming available on ADHD as tertiary institutions include the content of the disorder into the curriculum. The older educators say that they did not learn about ADHD in formal training. ADHD and other learning disorders are becoming more popular since the implementation of inclusive education as teachers need to be able to deal with all types of learning disorders in a mainstream class. According to Train (1996), educators need to be equipped with the skill of recognizing the symptoms of

ADHD, they should know how to deal with a child who has symptoms and what measures to take for referral.

4.4 RESEARCH SITES

Due to the researcher being a full time educator, it was thought necessary to conduct research in her school which is a public coeducational (for both sexes) school situated in the Durban South region and in the Umlazi district. The school comprises of both multi-cultural educators and learners. There are approximately eight hundred learners enrolled at this school. This was not only a convenient option but also an educated decision as approximately ten percent of the learners are diagnosed with ADHD or display symptoms of ADHD and gaining entry was not problematic as strong relationships with educators and learners were already built.

4.5 RESEARCH INSTRUMENTS

The following is a breakdown of tools the educator used to generate data.

4.5.1 PILOT STUDY

It is of utmost importance and absolutely necessary to conduct a pilot study in order to test research methods, materials and equipment in advance of running the full scale study. Pilot work should be conducted using a smaller group of subjects or a sub-sample which

is thoroughly representative of the sample the researcher will ultimately use or who represent the target population (Breakwell et al, 2000).

There are numerous advantages of conducting a pilot study. Pilot work can be used to test operational definitions and research methods which are still under active consideration (Breakwell et al, 2000). Pilot work is also beneficial to test if the participants understand instructions and also to examine if instruments are reliable and if not, to make the necessary modifications. In developing an interview schedule, pilot testing is extremely vital. It will enable the researcher to test how apt the questions are; to check if questions are leading, resulting in bias responses; confirm for relevance and also to verify the sequence of questions.

A pilot study was conducted with two teachers, one teacher from grade 4 and the other from grade 5 from another school. Both these teachers had learners diagnosed with ADHD and the learners were not on any medical treatment due to the choice of the parents. The researcher found the pilot study very useful as one of the questions from the interview schedule were leading and therefore had to be changed. The transcription of the interviews was very time consuming and took approximately seven hours to type verbatim. The researcher, therefore, had to allocate more time for typing five interviews.

The pilot study for the observation checklist was extremely useful as it assisted the researcher to refine the checklist by firstly conducting informal observations of

interactions of the ADHD learners with the physical and social environment. Thereafter, the researcher was able to categorise common behaviours as the baseline and noted the frequency of such behaviours.

4.5.2 SEMI-STRUCTURED INTERVIEW

Punch (2005) emphasises that the interview is a powerful research instrument capable of producing rich and valuable data. According to Radnor (2001), by asking people, we go into the realm of meanings and with interpretive research the meanings that people have in social situations are valuable and fundamental data.

The pilot interview schedule is an extremely effective method of collecting data. The interview schedule comprised of a list of questions and topics that dealt with issues that the researcher wanted to explore. The purpose of the interview schedule was to serve as a guideline to ensure that similar issues will be covered in all the forthcoming interviews. According to Patton (2002, p.343), the interview guide provides topics or subject areas within which the interviewer is free to explore, probe, and ask questions that will elucidate and illuminate that particular subject. The interview schedule comprised of closed-ended and open ended questions (Appendix B:2).

One of the strengths of the interview schedule is that the researcher was able to use the time efficiently and guide the responses. The researcher used 'pick ups' which are used to trigger the researcher in the case where the interviewee does not speak about a specific

aspect, then additional questions will be asked (Radnor, 2001). The researcher found this to be extremely useful because she did not want to leave anything out and the 'pick ups' served as a special reminder for her.

Another strength of the semi-structured interview is that other issues might emerge that were not listed in the schedule and that could be valuable data. Probing was also used and the researcher realises that this tactic can be incredibly useful. It allows the researcher to gain clarification by requesting the interviewee to explain further, expand or elaborate. It is a necessary and vital skill to have when conducting semi-structured, in-depth interviews. When you probe, you need to think about obtaining clarification, elaboration, explanation and understanding (Dawson, 2000, p.22).

Notes were taken on a separate sheet of paper. This was done so the researcher did not forget important points or questions while the interviewee was speaking. Each interview was recorded by using a dictaphone and was transcribed verbatim.

The questions formulated for the semi-structured interviews were based on an intensive literature review, which has already been stated in Chapter 2. The interview schedule comprised of nine questions (refer to Appendix B:2). All of the questions were open ended. Question 1 requested for the educator to describe the physical arrangement of the classroom and question 2 was what features of the classroom physical environment affects the behaviour of the learner with ADHD? These two questions formed the first theme "The impact of the physical environment on the behaviour of learners with

ADHD” By asking the educators about interactions between the learner with ADHD and his peers as well as the learners with ADHD and the educator, the researcher was able to gain an understanding of how social interactions in the classroom impact on the behaviour of the learner with ADHD. Question 3, 4 and 5 and 6 formed the second theme of “The impact of the social environment on the behavior of learners with ADHD”. Question 7, 8 and 9 dealt with educators and their interactions with the learner with ADHD. These questions have been divided into two themes. The third theme is “Challenges educators experienced in their interactions with the learner with ADHD” and the fourth theme is “Strategies used by educators to help them cope with these challenges”.

4.5.3 OBSERVATION

Radnor (2001), states that qualitative research is the essence of interpretive research and observing the research participants in the social world and talking to them are the ways in which the majority of the data which shape the research interpretation are collected. (p. 29). The researcher has selected observation because it enabled her to learn about things that participants are not willing to speak about in an interview. The researcher was able to observe the physical environment as well as the social environment in which the participants interact. Observation is useful for data on the context of a setting, behaviours and actions of participants, including verbal and non-verbal interactions (Bennet, 2003). The researcher opted to use an observation checklist (Appendix C:1) which enabled her to classify and measure the frequency of behaviours during the observation period. By

using an observation checklist, the researcher can count or tally the number of occurrences of the symptoms of ADHD. This provided a sense of structure to the observations and will make data analysis simpler and more manageable.

The observation checklist (refer to Appendix C:1) can be categorized into two parts.

Questions B1 – B9 deals with social issues and will be discussed under the heading “The educators’ perceptions of the impact of the social environment on the behaviour of ADHD learners.

Questions B10 – B14 deals with the physical aspects and will be discussed under the heading “The educators’ perceptions of impact of the physical environment on the behaviour of ADHD learners.

4.6 VALIDITY AND RELIABILITY

Validity is ensured by the researcher piloting the instruments and checking for bias in questions, verifying the data with research participants. This allowed the researcher to check if the instruments measured what they claimed to measure (Henning, 2004). Validation is also gained when one method is complemented by another, as in this research, interviews are complemented by observation. To avoid bias in the recording of responses, a dictaphone was used and responses were transcribed verbatim.

Undergoing trials of research instruments is an important step to ensure reliability. Reliability is also about checking the stability, dependability and consistency.

While instruments are reliable and will test the same aspects in a different context, results cannot be generalised as the sample size is small.

4.7 ETHICAL CONSIDERATIONS

The following ethical issues were considered:

- An ethical clearance form was sent to the University's Ethics Committee, which was forwarded to the Higher Degrees Committee.
- Informed consent from the Department of Education, the principals of schools, teachers and parents of learners was gained prior to research. (See Appendix A)
- The purpose of the research and methods used were explained to participants in an understandable language.
- Confidentiality was assured and names of participants were not divulged in this study.
- Data was made available to educators to validate.

4.8 SUMMARY

In this chapter, the purpose of this study was outlined and a description of the research methods and instruments were discussed. Validity and reliability as well as ethical considerations were acknowledged.

The following chapter, **Chapter 5**, presents the results and provides the analysis of data.

CHAPTER 5

ANALYSIS AND DISCUSSION OF RESULTS

The purpose of this study was to investigate the educators' perceptions of the impact of the learning environment on the behaviour of learners diagnosed with ADHD. The results as stated in this chapter attempted to address the following critical questions of the study:

- What features of the classroom's physical environment affect the behaviour of learners with ADHD?
- How do the interactions in the classroom affect the behaviour of the learner with ADHD?
- What are the challenges that teachers experience in their interactions with the learner with ADHD?

5.1 ANALYSIS OF DATA

The data obtained for this study was analysed qualitatively and quantitatively. The Statistical Package for Social Sciences (SPSS) was utilized in data analysis. This involves the editing and coding of raw data. Inconsistent data was identified and excluded from the analysis. Thereafter a coding template was established. This was

done so that key coding instructions for each variable could be captured. All questions were pre-coded in order to reduce errors resulting from incorrect data entry.

The data from the semi-structured interviews were analysed as indicated previously yielding a qualitative description of the perception of educators on the impact of the physical and social environment on the behaviour of learners with ADHD. Common themes were identified from the data analysis. The themes were established to ensure better understanding of the information gathered in the semi-structured interview.

It is important to understand how the learning environment impacts on the behaviour of learners with ADHD. For clarification reasons, the learning environment is categorized into two, namely the physical and the social aspects.

5.1.1 EDUCATORS' PERCEPTIONS OF THE IMPACT OF THE PHYSICAL ENVIRONMENT ON THE BEHAVIOUR OF LEARNERS WITH ADHD?

The educators were asked questions on the physical arrangement of the classroom. These questions were based on aspects such as seating arrangements, positioning of the learner and features of the classroom's physical environment that could be distractions for the learner with ADHD.

All of the educators stated that the learners with ADHD are constantly distracted by stationery, classroom games and resources. Learners with ADHD are usually the ones

who are drumming with their pencils, fiddling with other objects, looking in their desks while the educator is presenting a lesson. Neuville (1995, p.12) adds by stating that the learner with ADHD does not know which stimulus is important at what time. Due to the learner having difficulty in being seated for long periods of time, he wanders around the classroom looking for something more exciting. The learner with ADHD might fiddle or touch another learner's stationery. Educators expressed how other learner's space often becomes invaded.

The educators expressed concern as the learner with ADHD does not have good organizational skills, thus resulting in a very cluttered learning space. The learner then has to be reminded to pick up stationary, clean up desk and pack books away. This reprimanding takes up lots of teaching and learning time. Ingersoll (1998) refers to these learners as "organizationally challenged" and the goal of being organized is sometimes unattainable. According to Serfontein (1994) establishing routine, regularity and repetition is vital for ADHD learners in order to improve their organizational skills.

Educators conveyed how difficult seating arrangements can be. The learner with ADHD is often moved seated away from the doors and windows in order to minimize distractions. Eighty percent of the educators had the learner with ADHD away from windows and doors. Learners walking passed the classroom, sounds outside the classroom or a dog walking in the nearby field are examples of distractions that might draw attention away from the lesson. Strong & Flanagan (2005) adds by saying that learners with ADHD are basically unable to filter all the things that are happening around

them and are easily distracted away from what they are supposed to be focused on. The ADHD individual is not only distracted by external events but also by their own thoughts that their conversations are sometimes disjointed (Ingersoll, 1998).

Another concern of the educators were that even though there were strict controls and times for classroom game such as puzzles, the learner with ADHD would just take a game and start playing regardless if the classwork was finished or not. Learners with ADHD move from one activity to another without giving much attention to any of them and often discontinue with any set of work before its completion (Umansky & Smalley, 1994). In one of the cases, the classroom pet had to be removed as there were constant disputes regarding playing with the hamster and the completion of tasks. Flick (1996, p. 7) states that the learner with ADHD has difficulty in focusing on a specific stimulus, since all stimuli apparently impinge upon his/her senses at once.

Examples of responses:

- *If we have any sort of resources around the classroom, it distracts him. He gets involved in disputes initiated by other learners.*
- *We did have a pet but he concentrated a lot on that.*
- *He is always fiddling with his stationery and always looking into his desk for his stuff.*
- *He is distracted by other learners who are disruptive.*

- *She is always playing with pens and scissors or anything that she brings to class for a project.*
- *We have stringent times and controls with games but that doesn't stop her.*
- *She is type of child that does not know how to not retaliate so other disruptive learners also distract her.*
- *Any child that comes passed him, he will slap, he will kick or he will laugh at.*
- *My classroom has low big windows. If the curtains are open, he tends to look out and his mind wanders of or the slightest of activity outside the classroom will affect his attention.*

According to eighty percent of the educators, learners were seated in groups and twenty percent had groups for the others and a row for the learner with ADHD and other disruptive learners. Sixty percent of the educator had the learner with ADHD in the front of the classroom while twenty percent had the learner in the middle and twenty percent at the back of the classroom. Eighty percent of the educators had the learner with ADHD away from the doors and windows and twenty percent had the learners close to the door and window. It is noted that the twenty percent of the educators who had the learner close to the door and window had a prefab classroom. Large windows were on both sides. (See Appendix B:2)

5.1.2 EDUCATORS' PERCEPTIONS OF THE IMPACT OF SOCIAL ENVIRONMENT ON THE BEHAVIOUR OF THE LEARNERS DIAGNOSED WITH ADHD?

Educators were asked questions regarding the social interactions in the classroom and how it impacts on the behaviour of learners with ADHD. The respondents were asked to comment on how the learner with ADHD interacts with his or her peers and vice versa. The educators were requested to speak on their relationship with the learner with ADHD and the impact of interactions between them.

Learners with ADHD are frequently experiencing difficulties with social interactions. Learners with ADHD are often socially isolated due to the peers excluding them from games and classroom activities. Peers who used to be understanding at first have now become intolerant. One educator mentioned that if it was up to survivor tactics, then the learner will be left out of a group. Ingersoll (1998, p.185) states that whether or not a child is accepted by his classmates can be a make or break factor in the child's attitude towards school. Learners with ADHD are often referred to as 'social outcasts'. Educators described them as always being intrusive on other's space. They tend to touch stationery that belong to other learners, handle their desks and take their things. According to Strong and Flanagan (2005), this often occurs because learners with ADHD have a difficult time recognizing the space of others as well as understanding boundaries.

Developing good peer relationships is absolutely crucial for the development of children. However, children with ADHD are constantly being rejected by their peers and this could be emotionally devastating. It also has a negative impact on the child's self-esteem which could continue through to adulthood. Some of these children become social recluses when they reach adulthood.

Educators also complained that learners with ADHD were often intruding in conversations or taking over conversations that did not even include them. It is often difficult for a child with ADHD to keep a thought in mind for long, especially if they have to wait for someone to finish speaking (Strong & Flanagan, 2005, p.253). This often leads to many disputes and confrontations among peers.

In addition, learners with ADHD are often bossy and they feel the need to dominate games and activities. They want to decide what game they should play, how they should play it and they also want to decide on the rules of the game. From the educator's responses, it was gathered that learners with ADHD are frequently throwing tantrums if they do not get their way, because they do not like to lose. They may resort to cheating to win at games. This often results in trouble making friends and keeping friends. These social complications could only result in the reinforcement of low self-esteem.

Some educators expressed that not all confrontations are caused by the learner with ADHD. The peers often instigate a situation knowing that they will get a reaction. The peers then often respond in ways that promote problematic behaviour. According to

Barkley (2000) other children might reward clownish behaviour by smiling and giggling or they might retaliate.

Learners with ADHD are struggling so much for so many aspects of this disorder. There is a continuous battle that is raging within them. Often they feel as if a circle of seclusion and solitude has enveloped around them and yet they still might not understand why nobody wants to be their friend. The responsibility lies with parents and educators to teach the child practical social skills in order to develop a sense of self-worth and confidence.

These results have been divided into two categories namely:

5.1.2.1 Interactions between the learner with ADHD and the peers and

5.1.2.2 Interactions between the learner with ADHD and the educator.

5.1.2.1 Interactions between the learner with ADHD and the peers:

Examples of responses:

- *Most of the time, he is demanding attention and always trying to be part of conversations that have nothing to do with him.*
- *He involves himself with other learners when they are busy.*
- *Other learners try to ignore him at first but then he throws one of his tantrums, they get annoyed and irritated and then they don't want him to be part of their group*

- *If someone is poking at him and calling him names, he is not going to back down. He obviously is going to act out towards them and gets boisterous and wants to initiate a fight with them.*
- *He is always invading on others space, he does not allow his peer to continue a conversation because he is always butting into the conversation.*
- *Other learners are gone past the stage of being understanding.*
- *If it was survivor tactic, she will probably be left out of a group. She is used to that so she just forces her way in.*
- *He will go and stand next to another learner and try to make him laugh. At the beginning they loved it and would react so much that his behaviour would become worse.*
- *He calls people names. He loves calling people names.*
- *Other learners found it amusing at first. They loved him. All of them. The moment they realized that they will get into trouble, they became very intolerant. They actually got together and wrote a note to say why they don't want him in the classroom.*
- *He tends to makes faces at other learner and wants to be a clown as such and I had to speak to the class about ignoring him when he gets up to mischief or monkey pranks. At first it was difficult for them because they wanted to laugh but now they just ignore him.*
- *If other learners take something away from him, he gets very violent and gets into a fight.*

5.1.2.2 Interactions between the learner with ADHD and the educator

Examples of responses:

- *I have to be very tolerant towards him and patient but sometimes it does get a bit out of hand because there is only so much patience you can have. I wouldn't say an excellent relationship but a fairly good relationship. We do have lots of confrontations when he doesn't get his way then he likes to back chat or pick a little fight.*
- *The relationship is full of tension because I am always having to reprimand him which I don't like doing. When I ask him to come to the table to do a task, he takes a long time and as a result- his work is incomplete so the relationship is a bit tenuous at the moment.*
- *Some-days it can become quite tiresome because you try your utmost with positive reinforcement and stuff like that but there are some days when she is just really over demanding and the rest of the children in the class are the ones that suffer because of her constant demands for attention, we tend to overlook the others.*
- *It's a very difficult relationship. He doesn't respect me or the other children. It annoys me immensely and every evening, I say to myself, tomorrow morning I am going to be calm and not react but it doesn't take long. He is a constant irritation and I lose it. I often lose it with him.*
- *I have to correct myself on a daily basis. I have to daily think about it. I have got to treat him calmly. I mustn't react because that is all he wants. He wants a reaction and he gets it. It annoys me I allow it. He often wins, unfortunately.*

- *I do in fact feel sorry for him because I have tried in many ways. I can get very angry because you can only do so much. I have been very, very tolerant with him especially with simple things like homework no being done, sometimes for a week. But I have realised that being tolerant with him is not getting him anywhere due to his poor results this term.*

5.1.3 CHALLENGES THAT EDUCATORS EXPERIENCE IN THEIR INTERACTIONS WITH THE LEARNER WITH ADHD

The educators were asked to comment on the challenges they experience in their interactions with the learner with ADHD. They made known all the issues that concern them.

Educators experienced confusion and frustration with these learners and with good reason. They believe that these children are capable of better results. When asked to describe their relationship with the learner with ADHD, the words tiresome, tenuous, difficult, and exhausting were used.

It was clear that the educators are experiencing many challenges. One of the many challenges is the constant demand of time and attention, especially when there are other learners in the classroom. Educators made comments such as “we have other learners in the class who also require your time and attention and we don’t want it to seem as though

we are singling out a particular child” Educators thought that it is unfair for one child to get so much of their attention and neglect the others.

If the learners with ADHD do not get the required attention, they tend to engage in even more inappropriate behaviour. This could include disrupting other learners from completing their work, displaying clownish behaviour and initiating confrontations and fights. This had a negative impact as educators have to stop the lesson and deal with confrontations. Teaching time is suffering and work that was scheduled for that day often has to get postponed due to sorting out confrontations.

Another challenge that an educator mentioned is getting the learner with ADHD to complete their tasks. Due to their distractibility and impulsivity, they are not capable of keeping focused long enough in order to complete tasks.

Discipline is important for all children since it implies that there are boundaries for behaviour. It gives meaning to life and promotes personal strength; it creates a sense of security and self-determination (Train, 1996, p.119). While this might be true, discipline seems to be an enormous challenge for educators. The learners with ADHD do not follow rules or the consequence of punishment. They act without thinking about the consequences of their actions. Several times, they act on impulse, engage in risky behaviours and fail to follow instructions. At most times, they have a total disregard for rules. When educators are dealing with the learner with ADHD, other disruptive learners

see it as an opportune time to get out of control. Due to classes being large, discipline problems might be worse and educators have to deal with a lot of conflict.

Poor organizational skills are a hallmark of ADHD, much as muscular weakness is associated with many orthopedic conditions (Ingersoll, 1998, p.180). Learners with ADHD often have poor time and space management. Educators often have the task of reminding them to pack the necessary books to take home or clean up their work space. Ingersoll (1998) adds that sloppy, disorganized work habits could contribute to poor academic attainment.

Examples of responses:

- *When we try to discipline him, he doesn't really listen or try and follow the rules or the consequence or punishment.*
- *He is always demanding for my attention and my time which is difficult because we have other learners in the class who also require your time and attention and we don't want it to seem as though we are singling out a particular child.*
- *With discipline, we try so many different ways. We actually separated her from the group for a little while.*
- *Lots of teaching time is wasted on her. So lots of time gets taken up and other children suffer. Teaching time suffers!*
- *Getting him to do all tasks.*

5.1.4 STRATEGIES THAT EDUCATORS USE TO HELP THEM COPE WITH

SOME OF THE CHALLENGES THEY EXPERIENCE.

The researcher was eager to find out how the educators dealt with all the challenges that were previously mentioned. The educators responded by sharing some of the strategies they use to help them cope with the challenges.

As mentioned earlier, the responses of educators indicate the frustration they experience with learners with ADHD. Thus it is imperative for educators to have a large range of strategies to address and manage those behaviours associated with ADHD.

From the educators' responses to this question, it is indicated that they do have the right ideas with regards to positive reinforcement. Most of the educators have a positive and negative points system in place. According to Barkley (2000, p.244) positive and negative consequences are the most effective tools in management of the classroom.

Educators also use praise to acknowledge positive behaviour. Praise is one of the most potent tools in a good behaviour management program. Barkley (2000) suggests that praise is most effective when the educator is specific about what is being praised and it must be conveyed with genuine warmth. Ingersoll (1998), states that too often educators are too generous with criticism and stingy with praise. By praising and rewarding the child when he/she behaves the way you want, this reinforces self-esteem and encourages more of this positive behaviour (Strong & Flanagan, 2005, p.142). Gouws cited in Kruger and Adams, 2002) suggest the following strategies for using praise effectively:

- Make sure praise is linked directly to appropriate behaviour (contingency)
- Clearly specify the behaviour being reinforced: say, 'You returned this book on time and in good condition,' not 'You were very responsible.'
- Praise must be believable. Recognise genuine accomplishments, not just participation in general or simply being quiet and not disruptive in class.
- Set standards for praise in relation to a learners' past performance and not by comparing him or her to others.

By making a change to the environment, educators can minimize undesired learner behaviours, such as changing seating arrangements. Educators that participated in this study made adjustments so that distractions can be minimized, for example, one educator brought the learner with ADHD closer to the front for individual attention as well as not to disturb other learners who were in groups. Other educators moved the learner with ADHD from group to group but that didn't work.

Another strategy that the educators used were notes to the parents indicating learner's behaviour, social or academic progress. According to Rief (2005) this is an effective method as long as the reinforcement is carried out at home as well. This also shows that the parents and educators are working together towards a common goal and this is very beneficial for the learner with ADHD.

If unacceptable behaviour continues then the educator can take away specific privileges. One educator said: "He loves soccer and I thought if I can take something away from him

and I spoke to the soccer coach. When we told him that he can't play, he came here to the classroom when I was on my own and he sobbed like a baby". That was one way to get the learner with ADHD to behave accordingly. Another educator says that she uses the threat of the learner's father coming to school. According to the educator this works as the child has lots of respect for the father and would hate it if the father was disappointed in him.

Examples of responses:

- *We have a positive system where if the learner does get positive points, then he could get a letter home or sent to the HOD or principal and from there they will reward him accordingly for good behaviour.*
- *If there are any assessments, then we have to do them orally because of his short attention span.*
- *When he is doing something wrong, we praise the child who is doing something right and we hope that it will make him realise that he is not being praised and hopefully he will try harder the next time.*
- *I praise him a lot hoping that it will influence him positively as well as I send home letters to his parents to say that he has done well today and so on.*
- *I singled her out. That works for a little while. Lots of positive reinforcement like stars and stickers, behaviour charts, etc.*
- *The threat of the father coming to school.*

- *He loves soccer and I thought if I can take something away from him and I spoke to the soccer coach. When we told him that he can't play, he came here to the classroom when I was on my own and he sobbed like a baby.*
- *We use a reward system in terms of stars and sweets.*
- *He likes recognition from the other, especially the higher ability children.*
- *He looks forward to comments from the HOD and Deputy Principal.*
- *I have got him seated alone in the front and I found that it works for me because he gets his work done and he is closer to me so I can explain work if he doesn't understand a question without disturbing the other learners.*

The following chapter, **Chapter 6**, concludes the study, indicating the limitations and implications for further research.

CHAPTER 6

SUMMARY, IMPLICATIONS, RECOMMENDATIONS, AND LIMITATIONS

6.1 SUMMARY

The purpose of this study was to investigate the perceptions of educators on the impact of the learning environment on the behaviour of learners diagnosed with ADHD.

The results of this study have indicated that the physical and social environment contribute greatly to learners' behaviour. The physical aspects such as classroom arrangement, stationery, classroom resources, classroom pet and classroom games are forms of distraction for the learner diagnosed with ADHD. Results from the study also indicate that seating arrangement and the positioning of the learner with ADHD is an important consideration. Findings also indicate that learners with ADHD have difficulty in focusing on one stimulus at a time therefore everything is impinging on him or her all at once resulting in distractions.

The study reveals that social interactions between the learner with ADHD, the peers and the educator also impact on behaviour. Educators indicated that learners with ADHD lack the social skills and therefore are always involved in confrontations with their peers. Learners with ADHD often intrude on conversation, they want to dominate games, invade other learners space and throw temper tantrums if things don't go his or her way.

This often results in social isolation as not many children want to befriend a child who does this. Unfortunately, this often has social implications for later on in life. The responsibility lies with parents and educators to help develop social skills that would build up the learner's self-esteem and create a sense of self-worth.

The results from the study also reveal that educators are experiencing so many challenges which interrupt teaching and learning. Dealing with confrontations takes up a lot of time. The learner with ADHD often thinks that all the attention must be on him or her and therefore demands all the attention and time. Educators also mentioned that disciplining the learner with ADHD is also a challenge especially when they have tried so many methods and nothing seems to work at times as learners with ADHD can have a total disregard for rules.

Educators have revealed that they tried various strategies to help them cope with some of the challenges they experienced. Praise, positive and negative reinforcement, tangible rewards, letters sent home and changing of seating arrangements are strategies that were used by educators. Educators also resort to threats like phoning the parent and taking away of sport.

The quantitative analysis of the observation checklist and the qualitative analysis of the semi-structured interviews in this study, provided information on the impact of the learning environment on the behaviour of learners diagnosed with ADHD. In this

chapter, a general summary, is provided, limitations, implications of the study and the recommendations for further research are discussed.

6.2 IMPLICATIONS

There is an old African saying that ‘it takes a village to raise an African child’. This is very appropriate as with children diagnosed with ADHD. In order to achieve overall success, parents and educators need to be proactive. Parents, local communities and the school should perceive themselves as partners in the education process. Educators need to conduct an inner inspection on themselves with regards to strategies, their relationship with the child and how to manage behaviours that are inappropriate.

There is simply no easy solution that exists when dealing with ADHD. A multi-modal treatment is advised but every educator will still have her own unique way of delivering lessons and managing her classroom. Educators should keep abreast of new and different management strategies and current research.

Education is an extremely rewarding and fulfilling profession but it can be a demanding one as well. It is imperative, that curriculum developers of tertiary institutions include in their courses a comprehensive training program on how to deal with ADHD and other learning disorders. These training courses should encompass how to deal with various challenges that might arise when dealing with learners with ADHD. Student educators should also be equipped with knowledge of using various strategies that could help them

overcome possible challenges. Participants in this study as well as other educators would really benefit from workshops about the needs of ADHD learners and how to address these needs.

Discipline was one of the challenges that educators faced and it is considerably worse when there are large class numbers. Dealing with conflict is something that takes place everyday. An implication of this could be that educators should engage in conflict management courses as part of their professional development.

6.3 RECOMMENDATIONS

It is recommended that further research be conducted on ADHD in South Africa. This will ensure that the social context of children with ADHD is taken into consideration. It is of utmost significance to acknowledge that universal knowledge is important but it is necessary that knowledge must also be socially relevant. The social, political, cultural and economic conditions of children must be considered as this affects how barriers to learning is maintained, experienced and how they should be addressed (Donald et al,2002).

The research recommends that more emphasis be placed on inclusive education and the in-service training of educators. According to Donald et al (2002) many of the in-service training programmes that were initially intended to promote inclusive education have proved to be inadequate and inappropriate. It is a cause for concern that many new

educators enter the teaching profession with very little understanding of inclusive education.

With the recent advances in technology, it is envisaged that computers will be used to assist learners with learning disabilities (Ingersoll, 1998). There could be wonderful opportunities for learners not only with ADHD but other learning disabilities as well.

Dr. Russell Barkley is hopeful that advances in research is close to identifying the gene that is associated with ADHD and this will be most helpful in diagnosis. If this gene could be identified at an early stage, then preventive measures can be put in place (Ingersoll, 1998). There have been numerous advances in ADHD in the last decade, we can be positive about further research in the forthcoming years.

It is recommended that more research be conducted in psychopharmacology. Due to many parents being skeptical about Ritalin and its side effects, extensive research could lead to the production of medication with less side effects and that deals with specific symptoms.

6.4 LIMITATIONS OF THE STUDY

- The respondents had very busy schedules with regards to the extra curricular program of the school, therefore it was difficult setting a time where both the researcher and the respondent were available for interviews.

- The interviews were also dependent of educator honesty and it could be possible that educators provided the researcher with socially appropriate answers.
- Due to the sample size being so small, the results from this study cannot be generalised to a larger population. A larger sample would have required more time and this was not possible due to work commitments and responsibilities.
- Being a novice researcher, it is possible that there might be room for improvement regarding the research instruments. This will come in time as the researcher gets more practice in designing effective research instruments.
- Research that was previously done is relevant to developed countries. A limitation of this study is that there is a lack of research done in developing countries like South Africa. It is very likely that learning difficulties are greater due to social disadvantage. Addressing these issues cannot be the same as addressing issues in developed countries. Therefore, it is necessary for research to be conducted in our own social contexts.

6.5 CONCLUSION

Every child is unique and has special abilities. Every child has the ability to be brought to his highest potential. While this disorder can be very frustrating for parents and educators alike, these special learners can strive to achieve greatness with educator assistance. Learners with ADHD without a doubt have high hurdles to clear, but they indisputably can be successful in job opportunities and in personal life. It is acknowledged that while roads ahead will be bumpy and a few falls can be expected, but

with falling comes picking oneself up again to rise to a challenge ... a challenge that can be overcome. Many have been overcome before, if only Einstein and Churchill were here to tell the tale.

The poem below expresses how special and unique the experiences of a child with ADHD can be.

The Wonderfulness of Me

If you took all of the things that were special about me,

You would put them altogether and call it AD/HD.

No better, no worse, just different that's me

I'm really not crazy please try and see.

Like a talented wizard in a world full of 'Muggles',

It's no wonder all you see is frustration and struggles.

As I daydream and drift, you think no one's there

But nothing could be further from the truth, believe me, I swear.

I see your impatience as my mind starts to wander,

But you don't know the depth of the thoughts that I ponder.

For creative thinkers get lost in deep thought,

Which leads to the illusion that they cannot be taught.

I know trying to reach me can give you the blues,

*But I wish just for once, you could walk in my shoes.
Too see things through my eyes, you would be amazed,
At the speed and sheer volume, my thoughts seem to blaze.*

*I'm not lazy or stupid, if only you knew,
How truly difficult it is to limit myself and think like you do.*

But I can see things you'll never see,

It's like second nature, because I am me.

With lightning fast reflexes, I can switch gears,

To be firm and inflexible is the worst of my fears.

I'm calm in a crisis and know just what to do,

For I'm in great company, Mozart, Edison and Churchill to name just a few.

By Robert Tudiso

List of References

- Bandura, A. (1977). *Social learning theory*. Englewood Cliffs: Prentice Hall.
- Barkley, R. A. (2000). *Taking charge of ADHD: The complete authoritative guide for parents*. New York: The Guildford press.
- Bennet, J. (2003). *Evaluation methods in research*. London: Continuum.
- Berger, K.S. (1980). *The developing person*. New York: Worth Publishers.
- Breakwell, G. M.; Hammond, S. & Fife-Shaw, C. (2000). *Research methods in psychology*. London: Sage.
- Bukatko, B. & Daehler, M. W. (2001). *Child development: A thematic approach*. Boston: Houghton Mifflin Company.
- Dallos, R & Draper, R. (2005). *An introduction to family therapy, systemic theory and practice*. New York: Open University Press.
- Dawson, C. (2002). *Practical research methods: A user friendly guide to mastering research techniques and projects*. Oxford: How to Books.
- Denzin, N. K. & Lincoln, Y.S. (1998). *Strategies of qualitative inquiry*. Thousand Oaks: Sage.
- Diagnostic and Statistical Manual of Mental Disorders. (1994). (4th ed). Washington: American Psychiatric Association.
- Donald, D. Lazarus, S. & Lolwana, P. (2002). *Educational psychology in social context*. (2nd ed). Oxford: Oxford University Press.
- Du Plessis, S. & Strydom J. (1999). *The creators of ADHD on trial*. Totiusdal: Remedium.

- Engelbrecht, P. & Green, L. (2007). (Eds). *Responding to the challenges of inclusive education in Southern Africa*. Pretoria: Van Schaik Publishers.
- Fitzgerald, M., Bellgrove, M. & Gill, M. (2007). *Handbook of attention-deficit hyperactivity disorder*. Chichester: John Wiley & Sons.
- Flick, G.L. (1996). *Power parenting for children with ADD/ADHD: A practical guide for managing difficult behaviours*. New York: The Centre for Applied Research in Education.
- Goldenberg, I & Goldenberg, H. (2004). *Family therapy: An overview*. California: Thomson Brooks/Cole.
- Green, C. & Chee, K. (1994). *Understanding ADD*. Moorebank: Transworld Publishers.
- Greenberg, G.S. & Horn, W. F. (1991). *Attention deficit hyperactivity disorder: Questions and answers for answers*. Illinois: Research Press.
- Hallowell, E.M & Ratey, J.J. (1994). *Driven to distraction: Recognising and coping with attention deficit disorder from childhood to adulthood*. New York: Touchstone.
- Henning, E. (2004). *Finding your way in qualitative research*. Pretoria: Van Schaik Publishers.
- Ingersoll, B. D. (1998). *Daredevils and daydreamers: New perspectives on attention-deficit/hyperactivity disorder*. New York: Doubleday.
- Johnston, R.B. (1991). *Attention deficits, learning disabilities and Ritalin: a practical guide*. London: Chapman & Hall
- Kaplan, H. I. & Sadock, B.J. (1995). *Comprehensive textbook of psychiatry IV*. (6th ed,) Baltimore: Williams & Wilkins .

- Kewley, G. D. (1999). *Attention deficit hyperactivity disorder: Recognition, reality and resolution*. London: David Fulton Publishers.
- Kruger N. & Adams H. (2002). (Eds). *Psychology for teaching and learning: What teachers need to know*. Sandton: Heinemann Higher and Further Education.
- Mash, E. J. & Wolfe, D.A. (2005). *Abnormal child psychology*. California: Thomson.
- Mwamwenda, T. S. (2004). *Educational psychology: An African perspective*. Sandton: Heinemann Higher and Further Education.
- Neuville, M.B. (1995). *Sometimes I get all scribbly: Living with attention deficit hyperactivity disorder*. Austin: Shoal Creek Boulevard.
- O'Reagan, F.J. (2005). *ADHD*. London: Continuum
- Patton, M.Q. (2002). *Qualitative research and evaluation methods*. (3rded). Thousand Oaks: Sage.
- Picton, H. (2002). *Hyperactivity and ADD: Caring and coping*. Wivatersrand: University Press.
- Prithivirajh, Y. (2005). *Factors contributing to stress in parents of children diagnosed with attention-deficit/hyperactivity disorder*. Unpublished masters dissertation, University of KwaZulu- Natal.
- Prochaska, J.O. & Norcross, J. O. (2003). *Systems of psychotherapy: A theoretical analysis*. London: Thomson Brooks/Cole.
- Punch, K.F. (2005). *Introduction to social research: Quantitative and Qualitative Approaches*. London: Sage.
- Radnor, H. (2001). *Researching your professional practice: Doing interpretive research*. Buckingham: Open University.

- Rief, S.F. (2005). *How to reach and teach children with ADD/ADHD: Practical techniques, strategies, and interventions*. San Francisco: Jossey-Bass.
- Serfontein, G. (1994). *ADD in adults: Help for adults who suffer from Attention Deficit Disorder*. Sydney: Simon & Shuster.
- Silverman, D. (2000). *Doing qualitative research: A practical handbook*. London: Sage.
- Stordy, J. & Nicholl, M. (2002). *The remarkable nutritional treatment for ADHD, dyslexia and dyspraxia*. London: Macmillan
- Strong, J. & Flanagan, M. O. (2005). *AD/HD for dummies*. Hoboken: Wiley Publishers, Inc.
- Train, A. (1996). *ADHD: How to deal with very difficult children*. London: Souvenir Press.
- Umansky, W. & Smalley, B.S. (1994). *ADD: Helping your child*. New York: Warner Books.
- Wender, P. H. (1987). *The hyperactive child, adolescent, and adult*. New York : Oxford University Press.

APPENDICES

APPENDIX A



PROVINCE OF KWAZULU-NATAL
ISIFUNDAZWE SAKWAZULU-NATALI
PROVINSIE KWAZULU-NATAL

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RESOURCE PLANNING

INHLOKOHHOVISI

HEAD OFFICE

PIETERMARITZBURG

Enquiries: Mr S Alwar
Imibuzo:
Navrae:

Reference: 0024/2008
Inkomba:
Verwysing:

Date: 01 July 2008
Usuku:
Datum:

Miss CA Moodley
18 Mountainrise Road Silverglen
Chatsworth
Durban
4092

PERMISSION TO INTERVIEW LEARNERS AND EDUCATORS

The above matter refers.

Permission is hereby granted to interview learners and educators in selected schools of the Province of KwaZulu-Natal subject to the following conditions:

1. You make all the arrangements concerning your interviews.
2. Educators' programmes are not interrupted.
3. Interviews are not conducted during the time of writing examinations in schools.
4. Learners, educators and schools are not identifiable in any way from the results of the interviews.
5. Your interviews are limited only to targeted schools.
6. A brief summary of the interview content, findings and recommendations is provided to my office.
7. A copy of this letter is submitted to District Managers and principals of schools where the intended interviews are to be conducted.

The KZN Department of education fully supports your commitment to research: **The impact of the learning environment on the behaviour of learners with Attention Deficit Hyperactivity Disorder in the primary school.**

It is hoped that you will find the above in order.

Best Wishes

R Cassius Lubisi, (PhD)
Superintendent-General

APPENDIX B1

Biographical Questionnaire

Name: _____

Age: _____

Number of years of teaching experience: _____

Type of employment: Governing Body Permanent (Please tick)

Grade currently teaching: _____

Acquisition of an understanding of ADHD: Please tick the appropriate box/boxes

| | |
|-----------------|--------------------------|
| Formal training | <input type="checkbox"/> |
| Internet | <input type="checkbox"/> |
| Experience | <input type="checkbox"/> |
| Workshops | <input type="checkbox"/> |
| Literature | <input type="checkbox"/> |

Contact Numbers: _____ (Home)

_____ (Cell)

Interview Schedule

Name of Teacher: _____

Name of School: _____

Date of Interview: _____

Time of Interview: _____

Interview Questions:

Question 1: Describe the physical arrangement of your classroom?

Pick up on: structure: flexible or rigid

seating arrangements: group or rows. Is the child in front or back, close or away from the window or door.

classroom organisation

Question 2: What features of your classroom is a distraction for the learner with ADHD?

Pick up on: classroom toys, games

classroom pet

stationary

other disruptive learners,

classroom resources

Question 3: How does the ADHD learner interact with his/her peers?

Pick up on: invading another child's space

dominating games or sports

commanding attention in a group or the classroom

taking over a conversation

confrontations, fights

Question 4: How do the peers interact with the ADHD learner?

Pick up on: understanding, tolerant, entertaining, instigating, irritated, ignore, inclusive in games or class activities

Question 5: Do you think the behaviour of the other children towards the ADHD learner influences his/her behaviour? How?

Question 6: How can you describe your relationship with the ADHD learner?

Question 7: What are some of the challenges you experience in your interactions with the ADHD learner?

Pick up on: demanding attention, time

dealing with confrontations

complaints from other learners

disciplining

Question 8: What strategies do you use to help you cope with some of the challenges you experience?

Pick up on: reward system

positive reinforcement

classroom structure

teaching style

varying assessment style

Question 9: Do you think that your actions and words impact on the behaviour ADHD learner? Explain.

APPENDIX B: 3

A1.1 : Describe the physical arrangement of your classroom?

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|-----------------|-----------|---------|---------------|--------------------|
| Valid Groups | 4 | 80.0 | 80.0 | 80.0 |
| Groups and Rows | 1 | 20.0 | 20.0 | 100.0 |
| Total | 5 | 100.0 | 100.0 | |

A1.2 : Is the learner with ADHD seated at the back or front of the classroom?

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|------------|-----------|---------|---------------|--------------------|
| Valid Back | 1 | 20.0 | 20.0 | 20.0 |
| Front | 3 | 60.0 | 60.0 | 80.0 |
| Middle | 1 | 20.0 | 20.0 | 100.0 |
| Total | 5 | 100.0 | 100.0 | |

A1.3 : Is the learner with ADHD seated close or away from the door?

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------------------------|-----------|---------|---------------|--------------------|
| Valid Close to the door | 1 | 20.0 | 20.0 | 20.0 |
| Away from the door | 4 | 80.0 | 80.0 | 100.0 |
| Total | 5 | 100.0 | 100.0 | |

A1.4 : Is the learner with ADHD seated close or away from the window?

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---------------------------|-----------|---------|---------------|--------------------|
| Valid Close to the window | 1 | 20.0 | 20.0 | 20.0 |
| Away from the window | 4 | 80.0 | 80.0 | 100.0 |
| Total | 5 | 100.0 | 100.0 | |

A2 : What features of your classroom is a distraction for the learner with ADHD?

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|-----------|---------|---------------|--------------------|
| Valid Classroom games | 1 | 20.0 | 20.0 | 20.0 |
| Classroom games, classroom pet and classroom resources | 1 | 20.0 | 20.0 | 40.0 |
| Stationery, other disruptive learners and classroom resources | 1 | 20.0 | 20.0 | 60.0 |
| Classroom games and other disruptive learners | 1 | 20.0 | 20.0 | 80.0 |
| All of the above | 1 | 20.0 | 20.0 | 100.0 |
| Total | 5 | 100.0 | 100.0 | |

A3 : How does the learner with ADHD interact with his/her peers?

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|-----------|---------|---------------|--------------------|
| Valid Commands attention in a group or classroom, taking over conversation, involved in confrontation and fights and invades other learners space | 3 | 60.0 | 60.0 | 60.0 |
| Commands attention in a group or classroom and involved in confrontation and fights and invades other learners space | 1 | 20.0 | 20.0 | 80.0 |
| Dominates games and sports, commands attention in a group or classroom and involved in confrontation and fights | 1 | 20.0 | 20.0 | 100.0 |
| Total | 5 | 100.0 | 100.0 | |

A4 : How do the peers interact with the learner with ADHD?

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|-----------|---------|---------------|--------------------|
| Valid Was amused at first but now intolerant | 1 | 20.0 | 20.0 | 20.0 |
| Understanding at first but now irritated and annoyed at not inclusive in games and class activities | 3 | 60.0 | 60.0 | 80.0 |
| Irritated, not inclusive in games and class activities but accomodating when he/she needs help | 1 | 20.0 | 20.0 | 100.0 |
| Total | 5 | 100.0 | 100.0 | |

A5.1 : Do you think the behaviour of other learners towards the learner with ADHD influences his/her behaviour?

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|-----------|-----------|---------|---------------|--------------------|
| Valid Yes | 4 | 80.0 | 80.0 | 80.0 |
| Sometimes | 1 | 20.0 | 20.0 | 100.0 |
| Total | 5 | 100.0 | 100.0 | |

A5.2 : How does the behaviour of other learners towards the learner with ADHD influences his/her behaviour?

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|--|-----------|---------|---------------|--------------------|
| Valid Becomes more boisterous when other learners tease him/her | 2 | 40.0 | 40.0 | 40.0 |
| Gets more inquisitive and curious when he/she doesn't get attention from peers | 1 | 20.0 | 20.0 | 60.0 |
| Some peers instigate a situation just to get a reaction | 1 | 20.0 | 20.0 | 80.0 |
| Peers laugh at his/her pranks and therefore he/she gets more attention | 1 | 20.0 | 20.0 | 100.0 |
| Total | 5 | 100.0 | 100.0 | |

A6 : How can you describe your relationship with the learner with ADHD?

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|--|-----------|---------|---------------|--------------------|
| Valid Try to be tolerant and patient but there is only so patience a person can have | 1 | 20.0 | 20.0 | 20.0 |
| Very tenuous | 1 | 20.0 | 20.0 | 40.0 |
| Very demanding and tiresome | 1 | 20.0 | 20.0 | 60.0 |
| Very difficult relationship and I often lose it | 1 | 20.0 | 20.0 | 80.0 |
| Tolerant, patient and feels sorry for the learner | 1 | 20.0 | 20.0 | 100.0 |
| Total | 5 | 100.0 | 100.0 | |

A7 : What are some of the challenges you experienced in your interactions with the learner with ADHD?

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|--|-----------|---------|---------------|--------------------|
| Valid Dealing with confrontations and getting the learner to complete all tasks | 1 | 20.0 | 20.0 | 20.0 |
| Losing teaching time, dealing with confrontations and getting the learner to complete all tasks | 1 | 20.0 | 20.0 | 40.0 |
| Discipline, losing teaching time and demanding attention and time when there other learners in the classroom | 3 | 60.0 | 60.0 | 100.0 |
| Total | 5 | 100.0 | 100.0 | |

A8 : What strategies do you use to help you cope with some of the challenges you experience?

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|--|-----------|---------|---------------|--------------------|
| Valid Change of place and use of stars and stickers | 1 | 20.0 | 20.0 | 20.0 |
| Use of praise, individual attention for tasks and sending letter home | 1 | 20.0 | 20.0 | 40.0 |
| Threat of parent coming to school, taking away of sport, sweet reward, star chart and changing assessment styles | 1 | 20.0 | 20.0 | 60.0 |
| Positive and negative point system, change of place, use of praise, changing assessment style and individual attention for tasks | 1 | 20.0 | 20.0 | 80.0 |
| use of stars and sticker, use of praise, positive comments from the HOD and DP, change of place and individual attention | 1 | 20.0 | 20.0 | 100.0 |
| Total | 5 | 100.0 | 100.0 | |

A9.1 : Do you think that your actions and words impact on the behaviour of the learner with ADHD?

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|-----------|-----------|---------|---------------|--------------------|
| Valid Yes | 5 | 100.0 | 100.0 | 100.0 |

A9.1 : Do you think that your actions and words impact on the behaviour of the learner with ADHD?

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|-----------|-----------|---------|---------------|--------------------|
| Valid Yes | 5 | 100.0 | 100.0 | 100.0 |

A9.2 : How do you think that your actions and words impact on the behaviour of the learner with ADHD?

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|-----------|---------|---------------|--------------------|
| Valid If I reprimand him/her, he/she acts up more | 1 | 20.0 | 20.0 | 20.0 |
| He/she responds well to praise | 1 | 20.0 | 20.0 | 40.0 |
| When I give him/her a certain "look", he/she pays attention immediately | 1 | 20.0 | 20.0 | 60.0 |
| When the other learners gets my attention then he/she acts up even more | 1 | 20.0 | 20.0 | 80.0 |
| Using a reward system, I am able to get him/her to do what I want | 1 | 20.0 | 20.0 | 100.0 |
| Total | 5 | 100.0 | 100.0 | |

APPENDIX C: 1

OBSERVATION CHECKLIST FOR TEACHERS

LEARNERS NAME (Optional): _____ **AGE:** ____ **SEX:** _____

| Behaviour | Not at all | Just a little | Pretty much | Very much |
|--|---------------|------------------|----------------|--------------|
| 1. Enjoys meeting people | | | | |
| 2. Begins conversations | | | | |
| 3. Listening during a conversation | | | | |
| 4. Seeking help from peers | | | | |
| 5. Seeking help from the teacher | | | | |
| 6. Playing a game successfully | | | | |
| 7. Working cooperatively in group work | | | | |
| 8. Often interrupts | | | | |
| 9. Bossy or picks on other children | | | | |
| 10. Frequently out of his/her seat for a variety of reasons | | | | |
| 11. Fidgets with stationery when he/she needs to be focused | | | | |
| 12. Disorganised work space | | | | |
| 13. Easily distracted by sounds outside the classroom | | | | |
| 14. Easily distracted by classroom resources, charts, games, class pet | | | | |

(Edited from Golstein & Goldstein 1992 *Hyperactivity* Social skills questionnaire, p68 and Umansky & Smalley 1994: *ADD: Helping your child* Behaviour checklist for teachers, p8)

APPENDIX C: 2

B1 : Enjoys meeting people

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------------|-----------|---------|---------------|--------------------|
| Valid | Just a little | 1 | 20.0 | 20.0 | 20.0 |
| | Pretty much | 3 | 60.0 | 60.0 | 80.0 |
| | Very much | 1 | 20.0 | 20.0 | 100.0 |
| | Total | 5 | 100.0 | 100.0 | |

B2 : Begins conversations

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------------|-----------|---------|---------------|--------------------|
| Valid | Just a little | 1 | 20.0 | 20.0 | 20.0 |
| | Pretty much | 2 | 40.0 | 40.0 | 60.0 |
| | Very much | 2 | 40.0 | 40.0 | 100.0 |
| | Total | 5 | 100.0 | 100.0 | |

B3 : Listening during a conversation

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------------|-----------|---------|---------------|--------------------|
| Valid | Not at all | 1 | 20.0 | 20.0 | 20.0 |
| | Just a little | 4 | 80.0 | 80.0 | 100.0 |
| | Total | 5 | 100.0 | 100.0 | |

B4 : Seeking help from peers

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------------|-----------|---------|---------------|--------------------|
| Valid | Just a little | 3 | 60.0 | 60.0 | 60.0 |
| | Pretty much | 1 | 20.0 | 20.0 | 80.0 |
| | Very much | 1 | 20.0 | 20.0 | 100.0 |
| | Total | 5 | 100.0 | 100.0 | |

B5 : Seeking help from the teacher

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------------|-----------|---------|---------------|--------------------|
| Valid | Just a little | 2 | 40.0 | 40.0 | 40.0 |
| | Pretty much | 1 | 20.0 | 20.0 | 60.0 |
| | Very much | 2 | 40.0 | 40.0 | 100.0 |
| | Total | 5 | 100.0 | 100.0 | |

B6 : Playing a game successfully

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------------|-----------|---------|---------------|--------------------|
| Valid | Not at all | 2 | 40.0 | 40.0 | 40.0 |
| | Just a little | 3 | 60.0 | 60.0 | 100.0 |
| | Total | 5 | 100.0 | 100.0 | |

B7 : Working cooperatively in group work

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------------|-----------|---------|---------------|--------------------|
| Valid | Not at all | 2 | 40.0 | 40.0 | 40.0 |
| | Just a little | 3 | 60.0 | 60.0 | 100.0 |
| | Total | 5 | 100.0 | 100.0 | |

B8 : Often interrupts

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------------|-----------|---------|---------------|--------------------|
| Valid | Pretty much | 1 | 20.0 | 20.0 | 20.0 |
| | Very much | 4 | 80.0 | 80.0 | 100.0 |
| | Total | 5 | 100.0 | 100.0 | |

B9: Bossy or picks on other children

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------------|-----------|---------|---------------|--------------------|
| Valid | Pretty much | 3 | 60.0 | 60.0 | 60.0 |
| | Very much | 2 | 40.0 | 40.0 | 100.0 |
| | Total | 5 | 100.0 | 100.0 | |

B10 : Frequently out of his/her place for a variety of reasons

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------------|-----------|---------|---------------|--------------------|
| Valid | Just a little | 1 | 20.0 | 20.0 | 20.0 |
| | Pretty much | 1 | 20.0 | 20.0 | 40.0 |
| | Very much | 3 | 60.0 | 60.0 | 100.0 |
| | Total | 5 | 100.0 | 100.0 | |

B11: Fidgets with stationery when he/she needs to be focused

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------------|-----------|---------|---------------|--------------------|
| Valid | Pretty much | 1 | 20.0 | 20.0 | 20.0 |
| | Very much | 4 | 80.0 | 80.0 | 100.0 |
| | Total | 5 | 100.0 | 100.0 | |

B12 : Disorganised work space

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----------|-----------|---------|---------------|--------------------|
| Valid | Very much | 5 | 100.0 | 100.0 | 100.0 |

B13 : Easily distracted by sounds outside the classroom

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|-----------------|-----------|---------|---------------|--------------------|
| Valid Very much | 5 | 100.0 | 100.0 | 100.0 |

B14 : Easily distracted by classroom resources, charts, games, class pet

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|-----------------|-----------|---------|---------------|--------------------|
| Valid Very much | 5 | 100.0 | 100.0 | 100.0 |