THE MANAGEMENT OF LEARNERS DIAGNOSED WITH ATTENTION DEFICIT HYPERACTIVITY DISORDER IN SPECIAL SCHOOLS

By

Felicity Jane Tonkinson
Transvaal Teachers' Diploma, BSocSc (Natal), BEd (Unisa)

A dissertation submitted to the Faculty of Humanities University of Durban-Westville in partial fulfillment of the requirements for the degree of

MASTERS IN EDUCATION (EDUCATIONAL PSYCHOLOGY)
IN SCHOOL OF EDUCATIONAL STUDIES

Supervisor: Dr Z Naidoo

ACKNOWLEDGEMENTS

When putting together a project of this nature, there are many people who contribute in different ways, and who give without condition their time and counsel. I thank sincerely the following people and institutions for their support and contribution to this study:

My supervisor, Dr Rashida Naidoo for her guidance and constructive advice. Her invaluable input with the many hours of supervision have made a significant contribution to my academic development.

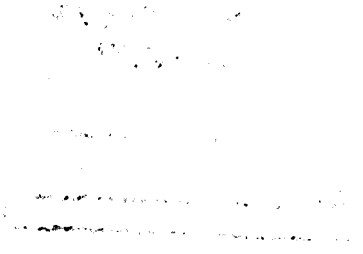
Lucky Khumalo for his assistance and patience to my endless queries regarding the construction of the research instrument and Indirani Naidoo for the statistical analysis of the data.

Nicky Mercier for her expert secretarial skills which she put to good use as she timeously typed and re-typed the questionnaire. Her enduring patience and sacrifice of her time is truly appreciated.

The educational authorities and the principals of the schools concerned, for granting me permission to conduct research and to those specific educators who participated in the trial run, I am eternally grateful.

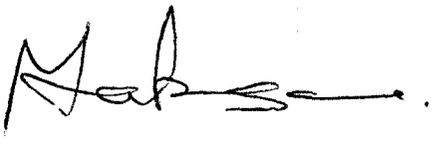
The educators who participated so obligingly and co-operatively as the respondents in the study and to all my colleagues that assisted me directly or indirectly in this project, thank you, your support has helped keep me focused on the goal of completion for this research.

I would like to pay a special tribute to my father Graham Taylor who passed away during my research. Thank you for always believing that I could do it. To my partner, Paul, the project would not have been possible without his reassuring encouragement, tolerance and sacrifice.



DECLARATION

I, Felicity Jane Tonkinson declare the dissertation "The management of learners diagnosed with Attention Deficit Hyperactivity Disorder in special schools" is a result of my own investigation and that it has not been submitted in part or full for any other degree or to any other university and that all the sources have been indicated and acknowledged by complete references.



FELICITY TONKINSON

ABSTRACT

The purpose of this study is to investigate how educators at schools for learners with special needs manage learners diagnosed with Attention Deficit Hyperactivity Disorder. Two major themes were investigated, namely, the organisational structure in these schools and the interventions utilised to manage these children. This study has focused on educators in these special schools who teach learners diagnosed with this disorder. A questionnaire was administered to 31 class educators from Grade One to Grade Seven in two of these special schools in the North Durban area. Survey data indicated that educators at these two schools for learners with special needs organised their learning environment so as to facilitate the efficient management of ADHD learners. Educators utilised a range of interventions both inside and outside the classroom. The implications of these findings are for those who teach learners diagnosed with this disorder, as well as those who are involved in designing learning environments and curricula, especially in the South African context.

TABLE OF CONTENTS

CHAPTER TWO LITERATURE REVIEW AND THEORETICAL FRAMEWORK

APPENDICES

i. Letter to Department of Education requesting permission to conduct research

ii. Letter from Department of Education granting permission to conduct research

iii. Letter from expert in field acknowledging face validity of questionnaire

iv. Pilot questionnaire

v. Final draft of questionnaire

vi. Letter of permission to conduct research in special school

vii. Letter to principal of special school in connection with the administration of the questionnaire

viii . Reminder to principal of special school about collection of completed questionnaire

ix. Frequency tables

LIST OF TABLES

CHAPTER ONE

CONTEXT AND PURPOSE OF STUDY

"Right now, we are like blind men describing an elephant. The elephant is there- this ....collection of people with varying attentional strengths and vulnerabilities. However, generating a definitive description, diagnostic workup, and treatment plan ....still poses a challenge."

Hallowell and Ratey (1995)

1.1 INTRODUCTION

Although ADHD has been a buzz word for a number of years, there is still little agreement as to what it is, what causes it, and how it should be treated. While its advocates claim it to be a mental disease which some say afflicts up to 20 percent of the population, others deny its very existence. Their argument is that the behaviour characteristics associated with this disorder - a short attention span, poor concentration, daydreaming, hyperactivity, impulsiveness and disruptive behaviour - are a normal part of childhood development (Strydom & du Plessis, 2001).

Consider Tom Sawyer's indifference to schooling and Huckleberry Finn's "oppositional" behaviour, they would say. Were they normal or suffering from ADHD? Another point frequently made by the opponents of ADHD, is

that this disorder has no definite thresholds. How dreamy is too dreamy? Where is the line between an energetic child and a hyperactive one, between a spirited, risk-taking kid and an alarmingly impulsive one, between flexibility and distractibility?

Attention Deficit Hyperactivity Disorder (ADHD) was first described almost 100 years ago, and the beneficial effects of stimulant medication have been well known for over half a century. Today when we talk about ADHD we refer to a slight but demonstrable difference in normal brain functioning that causes a child to underachieve academically and to behave inappropriately, despite receiving the highest standard of parenting and teaching. A tremendous amount of research has been published on children with ADHD and their primary characteristics and related problems, as well as on the situational variability of these problems, their prevalence, and their etiologies. It was estimated by 1979 that more than 2 000 studies existed on this disorder and this figure has surely doubled or even tripled in the past 19 years (Barkley, 1998). With so much current interest in ADHD one might think that we are in the midst of an epidemic but ADHD is occurring no more frequently than in the past - we have just become more skilful at recognising a very real condition that previously was missed and misdiagnosed (Green & Chee, 1995). As ADHD is caused by a subtle difference in the normal brain function, the seeds are present at birth.

The extent of the difficulty depends on the severity of the child's problem and how well their behaviour and education are managed. We cannot change this inborn predisposition, but we can most certainly modify the home and school environment.

1.2 DEFINING ADHD

Attention Deficit Hyperactivity Disorder (ADHD), characterised by inattentiveness, hyperactivity and impulsiveness - the "holy trinity" of ADHD (Barkley, 1994). ADHD has been researched extensively yet remains one of the most controversial of the disorders arising in childhood (Kaplan & Sadock, 1995). Recognised as a neurobiological disability affecting 3 to 5 % of school-age children, Dr Russell Barkley estimates that 40% of ADHD kids have a parent who has the trait and 35% have a sibling with the problem; if the sibling is an identical twin, the chances rise to between 80% and 92%. The Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (1994), separates the three hallmark characteristics of this disorder namely, inattention, hyperactivity, and impulsivity. If only inattention is found, the diagnosis is "attention deficit/hyperactivity disorder, predominantly inattentive type." Children with this diagnosis tend to have more learning impairments such as specific learning disabilities or a communication disorder. If impulsivity and/or hyperactivity is found, the diagnosis is " attention deficit/hyperactivity disorder, predominantly hyperactive-impulsive type."

Children with ADHD represent a heterogeneous population who display considerable variation in the degree of their symptoms, in the situational pervasiveness of those symptoms, and in the extent to which other disorders occur in association with it (Barkley, 1998). Children with this diagnosis tend to have more social difficulties and demonstrate more disruptive behaviours such as oppositional ,defiant or conduct disorders. If all the characteristics are present, the diagnosis is "attention deficit/hyperactivity disorder, combined type". This diagnosis tends to be the most complex as it involves multiple co-morbidities. Dr. Thomas Brown, Ph.D., at Yale University, refers to ADHD as the "wide umbrella" disorder because individuals demonstrate symptoms in a variety of ways (Boyles & Contadino,1999). Hyperactivity is defined as the behaviour pattern of learners who are constantly overactive and who have difficulty concentrating on one activity. Typically, these children will also appear to have boundless energy, need less sleep, are likely to be impulsive, emotionally immature and possibly prone to aggression. However, when the doctor uses the adjective 'hyperactive' to describe a child's behaviour, this indicates that the problem is relatively severe and goes well beyond simply being noisier or more boisterous than usual.

1.3 PREVALENCE

The actual prevalence of ADHD is the subject of much controversy. Doctors do not report their diagnoses to any central database, so estimates are made

on the basis of study populations and figures for the production of the stimulant medication, Ritalin. Various estimates are regularly offered : the one most frequently quoted (which uses DSM- 111 criteria) is based on a 1987 study done in New Zealand. It found that ADHD occurs in 6.7 percent of the general population of children. A more recent (1996) survey of nearly thirteen hundred children in four different areas in the United States, using later DSM criteria, found ADHD prevalence rates ranging from 1.1 to 4.1 percent in "mild" cases down to 0.3 to 1.9 percent for "severe" cases. The influential Joseph Biederman at Harvard has estimated that as many as 10 percent of American children have ADHD. If the usual ratio of four or five males to one female remained constant in this equation, then between one in six and one in seven boys between the ages of five and twelve would be diagnosed with ADHD. All of these estimates are, of course, only reliable as the method used to diagnosed the disorder. It is apparent how much the eye-of-the-beholder effect is operating in diagnosis, despite strenuous efforts at standardisation. Furthermore, DSM criteria are regularly ignored in making the ADHD diagnosis in real-world situations where doctors face pressure to prescribe medication (Diller, 1998).

1.4 ADHD IN THE SCHOOL CONTEXT

Children diagnosed with ADHD are different from their siblings at birth - it does not appear on the first day of school. Barkley (1994), suggests that learners with ADHD generally have a developmental lag of 30%, which

means that teachers should assume that these kids have an emotional age 30% below their actual age. Strydom and du Plessis (2001) demonstrate that eighty percent of children with ADHD have problems with reading, spelling and writing and that ADHD has a negative impact on intelligence (an average of seven to ten points below normal), on academic achievement skills (an average of ten to fifteen points below normal), and on academic progress (25 to 50 % are retained in grade, 36 % fail to graduate high school, and only 5 % complete a college education).

It is reported that ADHD learners can be managed but not cured. Classroom management is based on understanding the deficits and how they play out in performance, peer and authority relations and emotional relations. The educator's role in helping learners to come to terms with their problems is critical, first, because it is her job to ensure that the class society is one to which they actively want to belong, and secondly, because there is so much she can do, in the way she handles the ADHD learner and the way in which she manipulates the conditions, to make it easier for this type of child to adjust. One of the educator's main responsibilities as being the fostering the self-discipline in the learner and this includes self-control, self-direction, self-reliance and a sense of responsibility. A child is unlikely to make much progress towards this kind of self-discipline if he lives and works in a situation, which provide neither models nor experience of control.

Of paramount importance is the need to create classrooms and curricula where children are mentally and emotionally safe. Having insured that the classroom environment is conducive to helping children to come to terms with their problems, it is necessary to construct a policy for managing each learner. There are an immense variety of techniques, which an educator can use to change the situation for the learner in some way. Some she may use intuitively, others she may build into her policy quite deliberately. Really effective management of ADHD learners requires an immensely subtle orchestration of environment and events. Furthermore, there is an obvious need to structure academic demands and set attainable goals so that learners have a realistic chance of earning success. Those moments of success and breakthrough are immensely rewarding for the learner and needless to say, following each success comes motivation to achieve even more, and the production of education begins to take its course towards the production of a well-rounded, integrated adult. In essence, educators are responsible for the nourishment and growth of future generations, therefore they need to reflect on how they can reach and teach learners where they are (Rief, 1993).

1.5 ADHD IN THE SOUTH AFRICAN CONTEXT

Statistics for ADHD in South Africa are at best, guesses. It is, however, likely that in suburban South Africa we mimic the USA. A conference held in the United States in November 1998, highlighted that:

- ADHD is the most commonly diagnosed behavioural disorder of childhood affecting an estimated 3 % to 5 % percent of children over the age of 5.
- Symptoms of ADHD usually appear before the age of 7 years.
- ADHD affects more boys than girls.
- ADHD is largely an inherited disorder.

A review of the therapeutic interventions used by educational psychologists for learning-disabled children in South Africa, indicates that intervention is a holistic one in special remedial schools, mainly for white children. A multidisciplinary team is available to treat children and consists of remedial teachers, occupational therapists, speech therapists and educational psychologists. Intervention focuses on cognitive deficits in general and lacks transfer to children's subsequent academic performance. With the exception of the work by Skuy and other researchers using Feuerstein's (1980) Instrumental Enrichment Programme little, if any attention is given to disadvantaged children's inability to facilitate their cognitive abilities in higher order cognitive functioning. Although psychological services for black children in the outlying rural areas are established, service delivery is severely limited by sheer lack of personnel with the result that intervention focuses on crises intervention.

Engelbrecht (1993) reports that educational psychologists in South Africa are searching for individual as well as group and classroom therapeutic

interventions that are relatively culture-fair and free of bias in terms of educational and ethnic background. The therapeutic interventions projected, focus on cognitive and metacognitive processes in order to facilitate learning where cognitive process-based instruction can be tied to academic tasks and therapeutic interventions not only on cognition but on affect as well.

1.6 CONTROVERSIAL ISSUES

One thing is evident : As the ADHD criteria have changed and the diagnosis has expanded over the years, the total population of those diagnosed has grown. Mark Wolraich, professor of paediatrics and director of the Child Development Center at the Vanderbilt University Medical Center, attempted to show how teachers reports of ADHD were affected by changes in diagnostic criteria from the 1987 revision of DSM III to the current DSM-IV - which translates as a 57 percent increase in the overall number of children who meet ADHD criteria (Diller, 1998). Some researchers, such as Russell Barkley of the University of Massachusetts Medical School, now suggest that Ritalin should be the primary treatment for ADHD, and that in many cases "talk" therapies or special education may not be necessary at all. Barkley and like-minded experts have re-assured physicians that they no longer need to feel guilty about not offering a treatment plan that includes psychosocial elements. They cite new evidence that such combined treatment offers no greater benefits than Ritalin alone (Diller, 1998). Another controversial issue is the fact that medication is a quick fix for this disorder. According to Boyles

and Contadino (1999), there is no such thing. Like everything in life that is worthwhile, success for learners with ADHD requires some work to achieve.

1.7 RESEARCHER'S INTEREST

The researcher's interest stems from personal experience. Firstly, feeling inadequately prepared and lacking in knowledge on how to manage a learner diagnosed with ADHD who was in the researcher's class. He was undoubtedly an unconventional learner who did not fit into a conventional learners' mould. It was obvious that his learning environment did not meet his needs. Secondly, being given an opportunity to serve an internship at Livingstone Primary School (which is a short-term school for learners with special needs), where a significant number of learners are afflicted with ADHD, motivated an interest in this topic and thirdly, a family member was diagnosed with ADHD in 1996.

The need to develop a deeper insight into the management of an ADHD learner was of paramount importance. This would encourage structural re-framing and allow for a more effective approach when dealing with any aspect of their learning and behaviour. In South Africa, there has been no published research carried out on the management of ADHD learners in special schools. Personal involvement with ADHD learners has inculcated a belief that this condition is on the increase and is a highly variable, complex and imprecisely defined condition. It is also reported that the most beneficial

interventions administered to manage ADHD learners is a multifaceted approach which may include : behaviour modification techniques, individual counselling to learner coping techniques, problem-solving strategies and how to deal with stress and self-esteem, family counselling, cognitive therapy to give the child the skills to regulate his own behaviour as well as "stop and think" strategies and medical interventions to name a few. To what extent these approaches are adopted is in question because time seems to be of the essence in most institutions. Likewise, classroom environment is a very important factor in how learners function. Due to a variety of learning styles, environmental options should be offered to learners that consider how and where they work so as to encourage effective learning. Whether these areas could be overlooked or underplayed in special schools are also explored. All the above points inform the present study, where the management of learners in special schools diagnosed with ADHD is explored.

1.8 PURPOSE OF THE STUDY

The purpose of this study is to investigate how learners diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) are managed in special schools.

As class sizes increase and inclusion of learners with special educational needs is encouraged, the accompanying teaching and administrative workload of educators is becoming more burdensome and often intolerable.

To exacerbate matters, educators in recently 'integrated' schools have to also face up to the challenges of teaching learners who are linguistically, ethnically, socially and economically more diverse than the contexts for which they were trained. ADHD is seen in all social classes, ethnic groups and nationalities (Barkley, 1995). Within this context, how are such a diverse group of learners with such a disorder, managed in the school environment?

1.9 OBJECTIVES OF THE STUDY

The objectives of the study therefore are to:

- examine whether the organisational structure of a special school is an effective learning environment for ADHD learners.
- investigate the interventions administered to manage ADHD learners in special schools.

The theoretical framework adopted is that of Teeter's Transactional Model (Teeter, 1998). The behaviour-analytical approach advocated by Teeter is one in which interventionists and caretakers become expert observers of children's behaviours, and utilise information about biological and environmental influences to assess those behaviours contextually. Based upon these informed observations, interventionists and caretakers are better able to determine appropriate measures to constrain further development of ADHD.

The critical questions to be answered in this research are as follows:

- How do special schools organise the learning environment for learners diagnosed with ADHD?
- What types of interventions are in place at Special Schools to manage learners diagnosed with ADHD?

For the purpose of this study, the term's attention deficit disorder (ADD), attention deficit hyperactivity disorder (ADHD), and hyperactivity will be considered interchangeably. Furthermore, since most educators are female, they will be referred to as "she" and since the prevalence of ADHD is significantly higher amongst boys than girls, ADHD learners will be referred to as "he".

1.10 RESEARCH METHODOLOGY

A survey method was employed to collect data from participants. A questionnaire was constructed to assess how educators at special schools organised the learning environment for learners diagnosed with ADHD , as well as to explore interventions they employed in their classrooms to manage these learners. This instrument was administered to educators from Grade 1 to Grade 7 in two special schools situated in the North Durban region of Kwa-Zulu Natal. These schools were selected as they accommodate a significant

number of ADHD learners. They are both ex-Model C schools which therefore limits the generalisability of the results.

1.11 PRESENTATION OF CONTENTS

In Chapter Two of this dissertation, a historical perspective of ADHD, the prevalence, the cause and the diagnosis of ADHD is reviewed. Management, classroom and around the school interventions for the ADHD learner are also discussed followed by on-site support services for both the learner and his parents. Finally, the theoretical/conceptual framework is addressed.

The focus of Chapter Three is the methodology and description of the research instrument while Chapter Four reports on methods of data collection and the analysis of data. The discussion of the results will be the focus of Chapter Five. Possible recommendations, limitations of the study and a conclusion is drawn in the final chapter, Chapter Six.

CHAPTER TWO

LITERATURE STUDY

2.1 OVERVIEW OF ADHD

ADHD appears to be a developmental disability in the domains of sustained attention, impulse control and the regulation of activity level to situational demands. Diller (1998) is committed to a multi-causal, non-pathological view of ADHD in which both brain chemistry and environment contribute to children's problem behaviours. In this view, ADHD symptoms express a "living imbalance" between the child's inherent capabilities and the demands of his environment.

Green and Chee (1995) define ADHD as a manifestation of a cluster of symptoms and characteristics which interfere with learning and also impact negatively on the child's social adjustment. Barkley (1998) supports the above definition by saying that:

"Deficiencies arise early in childhood and are chronic in many cases: they are amplified by conditions of social disadvantage and predispose afflicted individuals to a high degree of social, educational and occupational under-achievement and to a lesser but significant degree of anti-social conduct."

There is no definition upon which all professionals agree but they do acknowledge that ADHD is a very complex disorder (McNamara & McNamara, 2000).

Most experts agree that ADHD can greatly affect the lives and futures of children who suffer from it, particularly in our fast-paced, information - intensive society . Ironically, there has never been a better time in our history to have this disorder as there are currently effective therapies for ADHD learners, and the volume of research being done on treatment and causes is extensive.

2.2 HISTORICAL PERSPECTIVE

Since the dawn of the century, children had been identified with personality - driven symptoms similar to those we now categorise as ADHD. Various names were used to describe this related group of behaviour problems, including MBD (minimal brain dysfunction) and "hyperkinetic reaction." These changes in terminology reflect changes in our thinking about the nature, the cause, and the course of the disorder itself. Whatever name the condition went by, a recurring symptom was always excessive motor activity, and this could be identified in a relatively small number of children. In the 1970's researchers, in a crucial shift, redefined the central problem as one of poor attention and distractibility. When psychiatry's official guidelines were revised in 1980, they included a newly named disease, attention deficit disorder,

described in a way that would ultimately encompass thousands, indeed millions of children with no symptoms of hyperactivity at all (Diller, 1998).

ADHD has many faces, so identifying and diagnosing ADHD children can be confusing. Today when the term ADHD is used, it refers to a child who has a small, but definite difference in normal brain function which causes the child to underachieve academically and to behave poorly, in spite of excellent parenting. The current name, Attention Deficit Hyperactivity Disorder, reflects the importance of the inattention/distraction aspect of the disorder as well as the hyperactivity/impulsivity aspect.

2.3 PREVALENCE

2.3.1 Prevalence in other countries

Today it is the most common behavioural disorder in American children. Dr James Swanson's group at the University of California at Irvine reported that the number of people diagnosed with ADHD in the USA actually doubled between 1990 and 1993 (Wallis, 1994). The sharp rise in ADHD diagnosis is directly tied to another startling statistic, a 700 % increase in the amount of Ritalin produced in the United States during the same time (Diller, 1998). Conversely, European nations, like France and England report one-tenth the USA rate of ADHD. Ingersoll (1998) adds, that in Japan, the disorder has barely been studied. In Italy, the diagnosis of ADHD is virtually never made and stimulant medications are not available.

2.3.2 Prevalence in South Africa

According to De Kooker (1988) and Hattingh (1996) as cited in Naicker (1999), learners with ADHD are estimated to be 5 - 7% of the learner population.

2.3.3 Gender ratios

The consensus of expert opinion as reported by the American Psychiatric Association (1994) seems to be that approximately 3% to 5% of the childhood population has ADHD (Barkley,1998). The proportion of males versus females manifesting the disorder varies considerably across studies, from 2:1 to 10:1, with an average of 6:1 most often cited for clinic-referred samples of children. Some experts suggest that 80% of all individuals diagnosed with ADHD are males (McNamara & McNamara, 2000). In South Africa about 90% of ADHD sufferers are boys and all population groups and economic classes are affected (Benn,D. Benn,J. Venter & Aucamp, 1998).

2.4 THE CAUSE

Researchers still disagree on the exact cause of ADHD, but two things are certain. It is a hereditary condition and the problems of ADHD result from a subtle difference in the fine tuning of the brain (Green & Chee, 1995).

Professor Lasich, the Acting Head of the Department of Psychiatry in the Faculty of Medicine at the University of Natal, states that ADHD is a classic example of a biopsychosocial disorder i.e. the symptoms are a result of an individual's unique biology, psychological make-up, life experiences and environment. This perspective is more holistic than the first view. He supports the evidence that suggests that ADHD is an inherited disorder and cites studies, which support this view. It has been found that 25% of the first-degree relatives of children with ADHD also have the disorder. This compares with only 5% of first-degree relatives of a control group of children with other mental disorders. Twin studies in which researchers compare the rates of a disorder in both members of pairs of identical twins have shown that as many as 80 to 90% of twin pairs, in which one child has ADHD, both have ADHD. Benn et al., (1998) document that approximately 80% of ADHD cases have a parent or close relative with ADHD.

Further work has suggested that a particular form of gene for the Dopamine D4 receptor might account for the altered patterns of brain activity seen in ADHD. One theory now beginning to be recognised in the USA is that part of the rise in hyperactivity is a change in the expectations we have of children in our society. Children can no longer play out in the streets because of traffic and other dangers, and schools have cut their playtime in order to fit in more lessons. Increasingly, the drive for better school performance both in the USA and in the UK has meant that children are spending longer at their desks, trying to reach nationally set targets from as young an age as six.

Jones (2000) supports the above view by commenting that these changes may have particularly harmful effects on a substantial minority of children, who thrive on physical exercise and particular forms of stimulation. Dr Tony Pelligrini, who is in charge of an international commission examining play in schools, has reported that increasing class time at the expense of play does not improve academic results, but in fact causes ADHD symptoms.

Ingersoll (1998) acknowledged that it was probably differences in diagnostic practices more than anything else that accounts for the greater frequency with which ADHD is diagnosed in the USA compared with other countries. Diller (1998), wonders whether if there still is a place for childhood in the anxious, downsizing America of the late 1990's. David Nylund, in his book "Treating Huckleberry Finn" supports Diller's standpoint by viewing ADHD as a cultural phenomenon where children are living in an ever-expanding, commercial culture that is increasingly frenzied and stressful.

2.5 DIAGNOSIS OF ADHD

"At last we allowed ourselves to grieve for the perfect child and get on with life and its new set of realistic expectations. Our love was not diminished. In fact, it was strengthened by a new understanding of our needful little boy. We shared every painful rejection and frustrating moment with him. Though patience often ran out, our love never did."

A parent

The most widely acknowledged current definition of ADHD is provided by the Fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV, APA,1994) which recognises three subtypes of ADHD : ADHD, Combined Type (ADHD/Com) ; ADHD, Predominantly Inattentive Type (ADHD/1) and ADHD, Hyperactive-Impulsive Type (ADHD/HI). The DSM-IV criteria outlines two clusters of symptoms, inattention and hyperactivity-impulsivity, each of which consists of nine behaviours. A child must present with six (or more) of the symptoms in either the inattentive or hyperactivity - impulsivity clusters or both to meet the diagnostic criteria for ADHD/I ADHD/ HI or ADHD/COM respectively. The criteria specifies that the symptoms must be developmentally inappropriate, have been present before the age of seven years, cause impairment in at least two settings, and result in a clinically significant impairment in social, academic or occupational functioning. In the South Africa context, the DSM-IV classification of ADHD is most widely used by mental health professionals.

It is universally acknowledged that ADHD is a medical problem with social, emotional, behavioural and educational ramifications and children diagnosed with ADHD possess their own individual combinations of these behaviours (Klopper, 2000). There are no laboratory tests that have been established as diagnostic for ADHD. The criteria used for identification are said to be vague and it is therefore understandable that prevalence figures for ADHD vary widely. In one epidemiological study conducted in England, only two children out of 2,199 were diagnosed as hyperactive (.09 percent). Conversely, in

Israel, 28 % of children were rated by teachers as hyperactive. In an earlier study in the United States, teachers rated 49.7 % of boys as restless, 43.5 % of boys as having a "short attention span," and 43.5 % of boys as "inattentive to what others say." According to Boyles and Contadino (1999):

"ADHD learners are like diamonds in the rough . It takes special care and time for them to dazzle. Love and patience are the tools to accomplish this goal."

2.5.1 Disorders associated with the ADHD learner

In order to effectively manage learners diagnosed with ADHD, it is therefore imperative that educators have an insight into the related disorders. McNamara, B. and McNamara, F. (2000), note that a child diagnosed with ADHD faces risks as high as 65 % for other co-morbidities, the causes of which are not clear. Some experts suggest that they may be the result of genetic, environmental or reactions to living with this disorder. ADHD children tend to be about nine Intelligence Quotient points behind their peers in intelligence. Studies have shown that about 30% have learning disabilities such as dyslexia, 40% exhibit depressed behaviour by adolescence, 60% have problems such as aggressiveness, temper tantrums, anxiety, and low frustration tolerance with little provocation; and 90% have academic problems or are underachievers. Most are hands-on learners and have difficulty in passive-learning situations that require continuous performance and task

completion. Furthermore, although they want to be liked and accepted by educators and classmates, they have difficulty establishing and maintaining friendships because they lack the ability to control their behaviour, which may cause serious problems with social relationships.

2.5.1.1 Specific Learning Disabilities

"Tis not enough to help the feeble up, But to support him after."

William Shakespeare

Many ADHD learners have academic achievement problems and repeat at least one grade or are placed in special education setting (Ingersoll, 1998). Zentall (1993) agrees with this statement by reporting that children with ADHD in the regular classroom face a risk of school failure two to three times greater than that of other children without disabilities but with equivalent intelligence. As far as spoken language is concerned, ADHD learners demonstrated poorer listening comprehension than matched controls and language production deficiencies. Written language skills likewise prove problematic for ADHD learners. Maths computation is the area in which learners are most likely to fall behind in as well as slower calculation speeds. About 9% of learners with ADHD have been characterised as having reading disabilities and are less likely to fall behind in vocabulary than comprehension, because vocabulary does not appear to be associated with sustained attention (Zentall, 1993). August and Garfinkel (1989) reported that 38% of learners with ADHD had spelling disabilities and the often intelligible handwriting of learners with ADHD is the result of visual-motor deficits.

Owing to the above specific learning disabilities, which the ADHD learner might possess, many of these learners are placed in special schools for learners who are learning disabled. The term "learning disabled" refers to learners who fail to learn at an expected rate despite an apparently normal capacity for learning. Thus, in order for a child to be diagnosed as learning disabled, there must be a significant discrepancy between the child's scores on intelligence tests (his "capacity" for learning) and his scores on academic achievement tests (his actual level of academic performance) in one or more of six areas: oral expression, listening comprehension, written expression, basic reading skills, mathematics calculation and mathematical reasoning.

Educators are becoming increasingly aware that the number of learners presenting with these problems is growing at an alarming rate, hence the need for a greater insight into their management and constructive help is needed to alleviate the situation. Boyles and Contadino (1999) state that the key to the success of ADHD learners is uncovering their strengths. These are their tools for survival in our competitive world and are the basis for problem-solving and bypass strategies and the armour protecting their spirit. Zentall (1993) continues to say that we also need to recognise the potential energy, creativity, leadership, and spontaneity of learners with ADHD when determining accommodations for them.

2.5.1.2 Behaviour disorders

Two behaviour disorders commonly associated with ADHD are Oppositional Defiant Disorder (ODD) and Conduct Disorder (CD). Children diagnosed with ODD deliberately do things to annoy others and when combined with the impulsiveness of ADHD can become volatile and even dangerous. CD children lack remorse for what they have done and their behaviour is often malicious. The combination of ADHD and CD may be very difficult for both parents and professionals to manage. Obsessive-Compulsive Disorder (OCD) can occur in conjunction with ADHD. A child with OCD will have an unusual fixation. Tourette's Disorder is a relatively uncommon condition but drugs used to treat ADHD can trigger Tourette's in a patient who is predisposed. Many of these children have behaviours very similar to the ADHD child, and are prone to developing OCD. Therefore, there is a need to provide ADHD learners with a setting which is both physically and psychologically safe thereby minimising the possibility of exacerbating the condition of them.

2.5.1.3 Emotional difficulties

A profile of a typical ADHD learner might be one who lacks self-esteem usually caused by his lack of academic achievement, poor peer relationships and social skills problems as they are inclined to lack social judgement and engagement as they tend to have their own theory of the world. Their

organisational skills, inability to follow directions and impulsivity, affects their functioning in the classroom. The more severe the condition, the less likely will they grow into well adjusted, self-sufficient adults, unless they are helped as children. The end result of this process may be a psychiatric disorder, such as Generalised Anxiety Disorder (Miller, 1998).

2.6 THE PROGNOSIS

As discussed above, learners with ADHD are "at risk" for school failure and emotional difficulties. However, with early identification and treatment, these learners can succeed. Up to 70% of learners with ADHD will continue to exhibit symptoms of ADHD in adulthood. Long-term studies show that children who receive adequate treatment have fewer problems with school, peers and substance abuse and show a better overall function compared to those who do not receive treatment (Hinshaw, 1999).

2.7 MANAGEMENT OF ADHD LEARNERS

As discussed previously, not only does ADHD behaviour make it harder for a child to succeed in school, but learning disabilities frequently are part of the picture. This is a circular trap: the child's frustration, caused by learning deficits, exacerbates his ADHD behaviour, while inherent temperament problems make it harder for him to stick with academic challenges. Research

shows that the ADHD disorder can be managed but not cured (Green & Chee, 1995). Classroom management is based on understanding the deficits and how they play out in performance, peer and authority relations and emotional relations. Dawn Hogan (1997) in her article "ADHD: A travel guide to success" says that:

"An informed traveller carefully chooses a destination, gathers information and plans an itinerary. Educators who promote learning for all children, including those with ADHD, should likewise carefully plot out their course. Proactive educators must study the research to gain insight into the causes, symptoms and manifestations of ADHD. They will form attitudes and opinions, making conscious decisions regarding their demeanour, approach and classroom environment."

Bryson (1998) states that effective teaching and learning cannot take place unless an educator is in control and is managing events in the classroom. The control of the effective manager is the control of the choreographer. They know where their learners need to go to produce a high level of individual and group performance, and the steps he must lead them through to get there. Likewise, classroom environment is a very important factor in how learners learn efficiently. Due to a variety of learning styles, there should be environmental options given to learners that consider how and where they work so as to encourage effective learning. This point lends itself to further investigation as according to the readings, ADHD learners have

specific classroom requirements and parameters in order to function.

Bryson (1998) maintains that in order to help learners with learning difficulties, effective classroom managers need to look at changes in teaching and learning strategies, not at changing learners. As effective classroom managers they will have developed both the generic and the specialist skills needed to support learners. Good support, like good teaching, begins with high educator expectations. This is the single most effective way educators can support their educators. The effective classroom manager will motivate and increase self-esteem through differentiated tasks, analysed to ensure that each stage and each strategy, is clearly defined in terms that are easily understood. This shift of expectation from failure to success, coupled with positive learning experiences, can lead learners to believe in themselves. Boyles and Contadino (1999) re-iterate the importance of cultivating a good self -esteem by saying ,

"How successful the learner is in life, starts with how he feels in his heart. An inflated ego caused by an overabundance of success is not a problem too many learners with ADHD experience. Strive to teach him self-control, not to control him. Help him harness his creativity, rather than smothering it. Build him up by helping him learn to use his strengths to navigate around those roadblocks to success."

2.7.1 Schooling

"The school has to nourish and educate feelings, intelligence and will."

Niblett (1954)

Chambers (2001) says that school is often the first move away from the extended family and is therefore an important link for a child to the big world outside. It should be a place that nurtures and sustains a child's development and continue the growth of a child's self-awareness, encouraging a healthy and positive self-image. Griessel, Louw and Swart (1995) comment that the most important task of the school is to assist the child during his emancipation from the family as micro-education milieu, by helping him to explore the wider macro-reality in which he will have to hold his own as an adult. Rosner (1993) states that :

"School success or failure depends on "goodness of fit" i.e. between a child's abilities and the demands of school life, the extent to which there is consonance between home and school expectations, and the extent to which school activities appear rewarding influence a child's readiness to meet school requirements."

Sadly, faced with the academic and social demands of the classroom, ADHD learners encounter failure and frustration as they try to fit into a setting for which Mother Nature clearly did not design them (Ingersoll, 1998).

Furthermore, because no two learners with ADHD are alike, no single educational setting, practice or plan will be best for all children. Instead, educators can help all learners by identifying their individual strengths and special learning needs and designing a plan for mobilising those strengths to improve learners' academic and social performance. Barkley (1994) maintains that educators must determine how to create learning environments that nurture those learners who fail to learn in traditional school settings. Schools that are most successful in helping ADHD learners, make certain that individual learners differences are reflected in the design of their education plans. The educators demonstrate a common commitment to working with them, understand the complexity of the disorder, and believe strongly in the services they are providing to all learners. Such schools work as a team to deal effectively with learners with ADHD by matching techniques and modifications to their individual potential and methods of learning.

According to Serfontein (1990) the school for the ADHD learner should meet certain essential requirements. It should have strictly graded classrooms. Due to their immaturity and maturational lag in the cognitive region of their brain, they need to be placed in classrooms where they are graded according to their ability level. The child would then be more able to compete with other children within the classroom at a reasonable rate of achievement and he can measure himself against others for the development of his self-esteem. Special schools realise that ADHD learners are not 'problem children,' but children with a problem. They encourage the school, parents, and teachers

to work together with the child in order to help that child develop skills and work habits that he will need to be successful in school and life.

2.7.2 Special schools

"Success is a science; if you have the conditions, you get the results."

Oscar Wilde

As discussed previously, when a child is diagnosed with ADHD, a disturbance of school functioning likely follows, which may be of academic or social significance. Many ADHD learners therefore cannot function successfully in a regular classroom. Ingersoll (1998) maintains that these children need the highly specialised teaching and small group setting provided only in a self-contained classroom or in a special school . In these schools a child with a learning disability is better able to cope with his condition and has a greater opportunity to demonstrate his strengths. In theory, in a special school learners receive appropriate, individualised attention more of the time (Goodlad & Lovitt, 1993). Part of what motivates parents in America to fight for their children to be placed in special education is frightening research showing that without proper care, learners with ADHD have an extremely high risk, not only of failing at school but also of becoming drug abusers, alcoholics and lawbreakers (Farrell, 1995).

Diller (1998) indicates that to date, the most successful programs for children significantly impaired by distractibility, impulsivity, and hyperactivity have

been those where children do spend time in a specialised, highly structured classroom. After they have experienced success there, learners are returned to the regular classroom - but he continues by saying that all too often, gains made in the special environment have not persisted. Unless ADHD learners and their educators get support and assistance in the behavioural techniques used in the special class, the learners tend to fail once back in the mainstream.

2.7.3 Special education in South Africa

In South Africa, despite the new dispensation education towards inclusionary practises, many learners diagnosed with ADHD are still placed in special schools so as to address specific lags (emotional, social, educational) and to help them to manage their disorder. Special education is currently organised in the following ways:

In segregated settings:

- Special education pre-school programmes
- Special schools for different needs, for example, schools for blind ,etc.
- Residential institutions for severe and profound types of 'special needs'.
- Schools of Industry and Reform, and Places of Safety for learners who have found themselves in trouble with the law or are in need of protection.

In mainstream settings:

- Special classes within mainstream schools

In South Africa, special schooling provision has been segregated and has only provided for a small percentage of children, while the majority of those with disabilities receive inadequate or no provision at all (Chambers, 2001). With a new education system which encompasses principles of an Outcomes Based approach (OBE) , that is based on a culture of human rights and thus should promote equal access to inclusive schooling, there is hope that this will change. This relatively new curriculum with its focus on 'preparing all pupils for adult life' has supposedly added more relevance to learning. It is a programme that no longer views teaching as instructing 'to' the learner, but rather makes a dramatic paradigm shift to doing things 'with' the learner.

Individualised Educational Programmes (IEP) should be developed concurrently and undertaken by learners with special needs. Chambers (2001) states that every child with special educational needs should have an IEP but in South Africa, this method is being used in only a few schools. Despite the uncertainties that this scenario suggests, creating equity for those learners most vulnerable to learning breakdown and exclusion is primarily dependent on a genuine and sustained commitment that the concerns of all learners, whatever the nature of their learning needs, are recognised as integral to overall educational transformation in this country (Mda & Mothata, 2000).

Furthermore, inclusive education is the long-term vision for all learners regardless of their special needs. According to Chambers (2001), inclusive education is gradually becoming a reality in some provincial education departments but the moves are small with the whole process being in embryonic phase. According to Diller (1998), a historical lack of success in returning special-education learners to regular classrooms is among the arguments for a growing movement known as 'full inclusion'. Putting more adults into the classroom is good for all learners, but especially for those who need more immediate feedback and attention. Full inclusion has some critics, including parents of the learning-disabled who feel it's a cosmetic solution and that only a special school will work. For the special-needs learner, then, rarely does a perfect environment exist. Rather, the solution tends to be a series of compromises. Naicker (1999) of the Department of Educational Psychology at the University of the Western Cape states that :

"The excitement of special education lies in its potential to transform and revolutionise the what happens in education for all children... ultimately, however, the excitement and potential of special education lies in a concern to take the 'special' out of special education."

Effective educators of ADHD learners understand that their relationship with the child is the single most powerful agent of change available to them. Bryson (1998) notes that learners with ADHD are helped best when the educator understands their special problems and makes some modifications

to the instructional program. Educators therefore play a significant role in providing the ADHD learner with an effective learning environment.

2.7.4 Educators

"I am putting old heads on your young shoulders .....all my pupils are the creme de la creme ."

Muriel Spark, The Prime of Miss Jean Brodie

An educator's personal qualities, teaching style and methods all play a fundamental role in the management of learners diagnosed with ADHD. Barkley (1995) points out that a positive educator-learner relationship can improve academic and social adjustment. Green and Chee (1995) support Barkley's viewpoint by stating that the choice of educator is all -important and when there are chemistry clashes between educator and learner, the classroom is not a happy place. Learners diagnosed with ADHD need an educator who is insightful, predictable, organised and encouraging. They need to know that they are accepted and appreciated but at the same time that the educator is firmly in charge.

Hogan (1997) maintains that successful teachers exhibit energy and enthusiasm, are creative and make learning fun. They set realistic goals for themselves and the learners. They recognise children's unique qualities and make it clear that learners think of themselves as special. They have the insight to salvage a bad day and learn from it. They realise the impo

accentuating the positives and responding to every improvement and achievement. Adults who have been hyperactive as children have reported that an educator's caring attitude, extra attention, and guidance were "turning points" in helping them overcome their childhood problems.

Diller (1998) says that more men should be put into classrooms as ADHD learners response to their fathers suggests that male educators may have more impact. Regardless of the gender, the educator should preferably be the same one throughout the year. The child with ADHD has great difficulty adjusting to changes in the environment and routine and, for this reason, it causes great problems when there is a frequent change in teacher. Hallowell and Ratey (1995) state that a learner with ADHD benefits greatly from having a 'coach,' someone standing on the sidelines with a whistle around her neck calling out encouragement, instructions, and reminders, and in general helping to keep things going on track. The most critical piece of advice that Rief (1993) gives is to find something that works and if something stops working, then try something else.

2.8 INTERVENTIONS FOR THE ADHD LEARNER

"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 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 the best use, rather than dissipating itself like so many tiny beads of mercury on the floor."

Hallowell and Ratey (1995)

Many children with ADHD have problems in class. Frequently reprimanded and tuned out, they lose any sense of self-worth and fall even further behind in their work (Wallis, 1994). ADHD researchers acknowledge that the right interventions can prevent such dreadful outcomes. "If you can have an impact with these kids, you can change whether they go to jail or to Harvard Law School," says psychologist James Swanson at the University of California in Irvine. Despite decades of research, no one is certain exactly what the optimal intervention should be. It is acknowledged that through the use of early intervention strategies, skills training and positive reinforcements, along with other disciplinary actions appropriate for the individual learner, schools can provide the support and structure which is most likely to result in the elimination or amelioration of problematic behaviours.

Rief (1993), in her book "How to reach and teach ADD/ADHD children" says that these learners are in particular need of a classroom that is structured, not chaotic. They need to feel secure within the parameters of their classroom, knowing precisely what is expected of them academically and behaviourally.

2.8.1 Classroom environment

Children with ADHD often need some special physical accommodations to help them learn. The experts in the 1950's and 1960's recommended classroom windows to have frosted glass, bare bulletin boards, and teachers

should be dressed in drab colours and wearing no make-up (Ingesoll, 1998). Green and Chee (1995) maintain that an ideal class would be one with a minimum amount of distraction but even if placed in a soundproof cell, ADHD learners are still capable of distracting themselves. Few if any schools or classrooms in South Africa have been specifically designed with the ADHD learner in mind. Funds are always of the essence and with inclusion being advocated, it is highly unlikely that architects will be commissioned to do so. Really effective management for the ADHD learner requires an immensely subtle orchestration of environment and events. Aspects of structure which facilitate with the management of the physical environment for the ADHD learner include class size, preferential seating, the use of visual aids and curriculum relevance.

2.8.1.1 Class size

Smaller classes are always an advantage as the ADHD learner does benefit from individualised attention. These children do better when the class size is between ten and twenty enabling them to develop some form of relationship with the other children in the class as well as the teacher. Garber,S., Garber, M. and Freedman (1990) discuss other strategies for lowering the learner-adult ratio which include using classroom aides, team teaching with media personnel, and enlisting parent volunteers.

2.8.1.2 Seating

Preferential seating is also vital for the ADHD learner. Visual and auditory distractions should be limited by seating learners in low-traffic areas, away from talkative peers, doors, windows, or air conditioners. Another option is to sit him next to a quiet child who he gets on with and who can cope with him. Sitting in the midst of role models can be a sobering experience for a child who is looking for others to join him in off-task behaviour (Garber et al., 1990). Piction (1997) recommends that the hyperactive learner is positioned close to the educator as it makes for effective management of his behaviour. Diller (1998) says that the traditional physical classroom structure should be restored in some classes-educator in front and the learner's desks in rows for the benefit of those who work better without a friend within reach.

Within the classroom "some simple, practical things work well," says Robert Reid, an assistant professor in the department of special education at the University of Nebraska in Lincoln. *"Let them move around. Give them stand-up desks, for instance. I've seen kids who from the chest up were very diligently working on a Maths problem, but from the chest down, they're dancing like Fred Astaire."*

Garber et al., (1990) recommend the ADHD child be seated at an individual desk rather than at a common table but near peers who are less likely to distract him. Diller (1998) discusses how one teacher had the smart idea of

naming an area at the back of her classroom "the office." Just as parents went to their offices to work, she explained, her learners could have their own office if they needed less stimulation to get their work done. In another classroom, another educator obtained a pre-fabricated study carrel-essentially, a three-sided box-designed for ADHD learners to decrease distracting stimuli. The use of a quiet place in the classroom where a child can go to escape distraction should be de-stigmatised as they shouldn't have to get into trouble to use such a space or feel bad about it.

2.8.1.3 *Visual stimuli*

Some authors comment that because these children are easily distracted, their corner should be kept relatively quiet. Bright and colourful posters, mobiles and other study aids that are frequently used in the classroom should be avoided and substituted with other plain but relevant items such as time-tables, charts or spelling words. On the other hand other authors advise to avoid making the ADHD learners corner too dull and boring as this could cause him to look elsewhere for stimulation - or create his own!

Not only must the classroom resources be managed, the curriculum must be delivered (Jones & Sayer, 1988). Experienced and informed educators are aware of the need to offer these learners relevant experiences so as to keep them focused. Strydom and du Plessis (2000), comment that one often finds

that learners diagnosed with ADHD can concentrate for hours on end in activities that they find enjoyable and that their inability to focus is often related to schoolwork only.

Whilst curriculum presentation was not a focus of this study, it plays a significant role in the management of learners diagnosed with ADHD and therefore deserves some mention.

2.8.1.4 Curriculum presentation

According to Jones (2000), special skills and talents are rarely taken into consideration when curricula are designed. Zentall (1993) maintains that children with ADHD pay attention to what is novel or stimulating. Busch's (1993) research has shown that learners with ADHD respond well to a meaningful, whole-language curriculum that "offers.... choice and ownership, and that supports learners in taking more responsibility for their own learning and their behaviour." As mentioned earlier, McNamara, B. and McNamara, F. (2000), mention that Individualised Education Programmes should be developed and geared for each learner's individual needs. These, in turn, require periodic re-evaluation so as to take into account possible changes because of treatment effects, maturation, and other factors.

Learners with ADHD symptoms can learn ways to manage them-but they can't do it by themselves. Adults, and in this study educators, play a definite role by externally providing the control that the child is unable to supply from within. Many of the below mentioned classroom interventions can help the learner become more able to make the "right" choices even when his impulses are pulling him in the wrong direction.

2.8.2 Classroom interventions

Only one form of psychosocial treatment has been established in empirical trials, as clearly effective for learners with ADHD. The Multimodal Treatment Study of Children with ADHD was a six-site clinical trial with 579 children between 7.0 and 9.9 years of age and diagnosed with combined-type ADHD serving as participants. At urban and rural centres in the USA and Canada, these children and their families were assigned randomly to one of the following four treatment strategies for a 14 month period:

- medical management
- behavioural treatment
- combined treatment
- community care

Although all four groups showed improvement across the study period for the outcome domain of ADHD symptoms, medication management and combined

treatment produced much greater benefit than did behavioural treatment or community care alone. Research shows that medication treatment cannot work in a vacuum: learners with ADHD typically need training to learn how to apply their academic and social knowledge in the classroom and with their peers. Combination treatments offer some advantages over single treatments, and lower dosage levels of medication may be achieved with multimodal approaches.

According to Barkley (1995), behavioural interventions for ADHD in the classroom include a range of in-class consequences, home-based programs, self-management interventions, and modifications of academic tasks. Teacher-administered consequences continue to be the most commonly used behavioural interventions with ADHD learners. A combination of positive consequences (praise, tangible rewards, token economies) and negative consequences (reprimands, response cost, time out) has been shown to be optimal. Needless to say, their success with ADHD learners is highly dependent on how and when they are administered.

2.8.2.1 In-class consequences

The types of consequences used with ADHD learners must often be of a higher magnitude, or more powerful. An effective management system concentrates on a few behaviours at a time with additional patterns added when the first ones are mastered. One should give the child specific rules

which are phrased positively in terms of what the child should do. A sound piece of advice is to make rules few, clear and consistent (McNamara & McNamara, 2000). Many educators have learners discuss, decide on, and write the classroom rules to give more ownership in class and then post them in at least one visible spot. One may even role-play rules in action. James Thomas (1991) suggests a technique called "descriptive reinforcement." He recommends praising the learners by using their names and a verbal description of whatever they did to earn that praise. He stresses that educators avoid using "I-like" statements. Instead, Thomas encourages "self-talk" whereby learners talk about how they feel when behaviour is self-gratifying rather than pleasing to the educator.

ADHD learners respond well to a behaviour management system in which rewards are given for good behaviour (O'Brien, 1998). Reward systems encourage learners to work toward earning privileges or rewards by gaining points for desired behaviour and losing points for undesired behaviour. Rewards must be changed periodically to maintain the power of efficacy of the program in motivating appropriate child behaviour Physical proximity in which educators move about to make their presence known without being intrusive and private signals are two classroom interventions recommended by some experts. A gentle hand on an arm or shoulder can be an effective reminder. Predictable non-verbal cues such as flicking the lights, ringing a bell or raising a hand can also be used.

Green and Chee (1995) maintain that every educator knows there are days when educating the ADHD learner is impossible. Fatigue, stress and pressure can shatter children's self-control and lead to inappropriate behaviour. Opportunities must be provided for rest and relaxation throughout the day. Ingersoll (1998) comments that these individuals do better in the classroom when they are provided with frequent breaks for physical activity and when they are allowed to work in an other-than-seated position, if they choose. Educators should allow fidgety ADHD children to 'fiddle' with objects such as stress balls while listening to instructions or during between activities. Another classroom intervention, which is adopted in many classes for ADHD learners, is peer interventions. It provides them the immediate feedback these impulsive children need, while reducing demands on teachers' time.

Negative teacher-administered consequences include reprimands, response cost and time-out. Some studies show that brief reprimands may be more important than praise for maintaining appropriate behaviour and that reprimands that are immediate, unemotional, brief, and consistently backed up with time-out or a loss of a privilege for repeated non-compliance behaviour, are far superior to those that are delayed, long, or inconsistent (Ranney, 2000).

Another proven strategy to help ADHD learners behave is to provide a specified time-out location to which the learner can go when he is not in

control. Garber et al., (1990) comment that a time-out period emphasises the error of the child's ways but quickly gives him a chance to act appropriately. Some educators use a "think-about-it" chair for a specific amount of time, e.g. for 3 to 5 minutes to think about their inappropriate behaviour. Other educators use social isolation where learners sit away from the class until they feel ready to join the class again. Another option may be to remove the learners work and encourage them to put their heads down on their desk for a brief period.

2.8.2.2 Home-based programs

According to Barkley (1998), home-based contingencies continue to be among the most commonly recommended interventions. Chambers (2001) supports the above recommendation by saying that the communication links with families are crucial for the ongoing development of the child. However, as pointed out by Abramowitz and O'Leary (1991), effective implementation of these is not a simple procedure as both educators and parents need to understand basic behaviour modification, how to select and rotate rewards, and the concept of consistency.

2.8.2.3 Self-management interventions

Self-management interventions, which include self-monitoring, self-reinforcement, and more comprehensive self-instruction and problem-solving approaches involve the learners monitoring and evaluating their own academic and social behaviour and rewarding themselves. Barkley (1998), notes that most gains are achieved from self-management programs.

2.8.2.4 Modifications of academic tasks

Written tests present particular difficulties for the ADHD learner. His lack of organisational skills, planning and ability to quickly assess what is important and not important, place him at a disadvantage. In addition, his difficulties with handwriting and his slowness in processing information frequently lead to test results which do not reflect the learner's proper abilities. These learners are better served by a school system which allows for extra time to complete tasks and a combination of frequent assessment of the child's class work throughout the year. Assessment should be based partly on effort as well as results. Oral exercises, the use of a computer with a spell-check facility, and the availability of a scribe are useful aids to these learners. As mentioned earlier, the ADHD learner, because of his disorganisation and great reliance upon routine and regularity and repetition, requires an orthodox and structured environment both in and out of the classroom.

2.8.3 Managing around the school

The ADHD learner's low self-esteem and his misreading of social skills causes him significant problems in interacting with the other children in the playground. As he tends to be a loner, he is frequently isolated and at the risk of victimisation by other children. They are easily led and easy targets as when teased, they rise to the bait (Green & Chee, 1995). On the other hand, many of these children are aggressive in their relationships with their peer group and need to be well monitored and controlled so that these times of aggression and points of friction, can be minimised. Certain interventions, which pertain to the management of these learners in the classroom also pertain to their management around the school and on the playground and may be deemed necessary so as to prevent the above-mentioned situations from arising.

Besides educator administered behavioural interventions in the management of ADHD learners, medical intervention may be overseen by either educators, other therapists, heads of departments or in some schools, the nurse.

2.8.4 Medical management

"In late twentieth-century America, when it is difficult or inconvenient to change the environment, we don't think twice about changing the brain of the person who has to live in it."

Ken Livingston, The Public Interest

Usually the use of medication is sanctioned only as a last resort or in a crises situation, and in combination with multiple nondrug interventions. As Ritalin is the most widely used medication for ADHD, the researcher will discuss this particular stimulant. It is reputed that Ritalin does not "cure" ADHD in the sense that an antibiotic cures an infection or surgery removes a tumour. Ritalin does not improve complex skills such as reading, athletic ability, and social behaviour. Grades may improve, but Ritalin cannot correct a learning disability. It can however, reduce the symptoms of hyperactivity, poor attention, and impulsivity for as long as it remains active in the body.

Hallowell and Ratey's book, Driven to Distraction (1994), is probably the best-known book supporting Ritalin as the central treatment for this "brain based" disorder. Diller (1998) points out that recently a few experts have expressed the more daring opinion that for some children with ADHD, Ritalin alone may be used as the first and only appropriate intervention. It has been estimated that pharmaceutical companies in the USA earn approximately $450 million a year with stimulants (nearly all legal use of stimulants in the USA is for ADHD treatment). In South Africa, Ritalin use is increasing between two and four per cent a year (Fairall & Rogers, 2001).

While some are praising Ritalin, others are of a contrary opinion. Child Psychiatrist, Carl L. Kline of the University of British Columbia, as quoted in Strydom and du Plessis (2001), is reported as saying that "Ritalin is nothing more than a street drug being administered to cover the fact that we don't

know what's going on with these children." Some experts have even nicknamed it "kiddie cocaine." The drug has become such a common element of schooling that the New Yorker magazine listed it as one of the three R's - "Readin, Ritin, Ritalin" on its cover (Strydom & du Plessis, 2001).

Serfontein (1995) disagrees with the above view point and says that when one has improved the internal environment in the child's brain, the child responds much more appropriately to the other therapies that are designed to improve his external environment. Many educators in this study are aware that drug therapy usually gives rise to some side-effects but their insight is limited.

2.8.4.1 Short term side-effects of medication

The side-effects of Ritalin are usually short term. In normal low-dose usage, Ritalin can control insomnia. Children may have trouble falling asleep if Ritalin is taken too late in the day. Decreased appetite is common while Ritalin is working, but as soon as the drug's effects have worn off, hunger returns, often with greater intensity. Other effects have been suggested over the years but not proven consistently. For example, a possible connection was proposed between Ritalin use and the development of involuntary movements called tics, associated especially with Tourette's syndrome. Follow-up research failed to confirm a strong connection, however (Diller, 1998). Higher doses of Ritalin usually lead to children's complaining of

nervousness, palpitations, tremor, and/or headaches. Rebound is a term used to describe the worsening of symptomatic behaviour after a drug has worn off. Rebound from Ritalin is not uncommon; some parents feel that their child becomes even more "hyper" in the late afternoon or evening, as the drug wears off.

Apart from its physical side-effects, there has been some concern that Ritalin may have more subtle impacts on cognitive and intellectual processes (Diller, 1998). Reports also indicate severe psychological effects. A large percentage of children become robotic, lethargic, depressed, or addicted to stimulants and withdrawal from them can cause emotional suffering, including depression, exhaustion, and suicide. Psychotic episodes and violent behaviour are also associated with chronic Ritalin abuse.

2.8.4.2 Long term side-effects of medication

In his book Talking Back to Ritalin, psychiatrist Breggin (1996) documents other side-effects, which he claims have been confirmed by scientific studies but are ignored by the advocates of Ritalin. He states that Ritalin can retard growth in children by disrupting the cycles of growth hormone. According to Breggin, there is research evidence that Ritalin can cause shrinkage or other permanent physical abnormalities in the brain.

Perhaps the most controversial issue in the Ritalin debate is the question whether its use can lead to psychological drug dependence in the long run. A study titled "Is Ritalin like cocaine?" concluded that when Ritalin was given to cocaine users, they said it was "almost indistinguishable." "The early exposure to a stimulant makes the brain more receptive to other drugs," says Dr. Dennis Donovan, a child psychiatrist. "Ritalin is becoming the 'gateway drug' that leads kids into later drug use," adds psychologist Breeding (Strydom & du Plessis, 2001).

As stated previously, in South Africa there has been an increase in the diagnosis of ADHD and in the prescription of Ritalin as a form of treatment. One questions whether ADHD is being over diagnosed or is it being used as an umbrella term under which all the disruptive and behavioural problems are subsumed. Perhaps the wisest words written about the medication controversy are in the book written by Green and Chee (1995):

"Children, adolescents and even adults with ADHD live their lives with a circling, muddled mind. When medication is effective they become more clear thinking and focused. Humans take addictive drugs to escape the world, not to become fully focused on reality....You don't get addicted to reality."

For the past thirty-five years, the multimodal has been recommended by the psychiatric establishment as the treatment of choice. A study completed in the 1980s by James Satterfield, a child psychiatrist at the University of California in Irvine, and colleagues , is cited as the best proof for the value of this approach. This study followed two groups totalling a hundred boys for nearly ten years, into late adolescence. Years earlier, both groups had received treatment with Ritalin, along with very brief counselling for one group, while the other group received more intensive individual and family counselling and special education services. When they were evaluated at the end of adolescence, the latter group was significantly less likely to be in trouble with the law (Diller, 1998).

There is little doubt that the use of pharmacology in the management of the disorder will continue its dramatic rise in popularity, owing in no small part to the repeated demonstration of the efficacy of stimulants. Empirical evidence supports the use of interventions that combine behavioural and medically based approaches in the management of ADHD children. Educator observation of medication together with responses in the classroom and playground, is an integral part of management even though one may question the knowledge that educators possess about medically related issues e.g. administration of medication, monitoring of medication, side-effects and overdosing and underdosing.

2.8.4.3 Administration of medication

Train (1996), comments that there should be no reluctance on the part of teachers to assist in administering the ADHD learner's medication because firstly, it ensures that the child receives the appropriate dosage and continues to benefit from the treatment in improving his acquisition of the basic skills as well as his behaviour; secondly, it also ensures that no other child in the class receives the medication by accident. In support of the previous statement, Green and Chee (1995) note that to administer medication arbitrarily and without detailed preference to parents, educators and other caregivers is clearly wrong and dangerous.

2.8.4.4 Educator monitoring of medication

Garber et al., (1990) indicates that it is essential to set up a system to monitor how the medication affects the specific aspects of ADHD because these drugs not only effect each child differently, but they may affect the child's symptoms differently as well. Only in this way can the learner's team - parent, educator, therapist and physician - make appropriate decisions for him. Levine (2000) agrees with the above view by stressing the importance of consistent monitoring of medication and its side-effects and maintains that it is not possible to medicate successfully without having an accurate system for monitoring .

2.9 A SOUTH AFRICAN PERSPECTIVE

A review of the therapeutic interventions used by educational psychologists for learning-disabled children in South Africa, indicates that intervention is a holistic one in special remedial schools, mainly for white children (Engelbrecht, 1993). A multidisciplinary team is available to treat children and consists of remedial teachers, occupational therapists, speech and language therapists and educational psychologists. Intervention focuses on cognitive deficits in general and lacks transfer to children's subsequent academic performance. With the exception of the work by Skuy and other researchers using Feuerstein's (1980) Instrumental Enrichment Programme, little if any attention is given to disadvantaged children's inability to facilitate their cognitive abilities in higher order cognitive functioning. Although psychological services for black children in the outlying rural areas are established, service delivery is severely limited by sheer lack of personnel with the result that intervention focuses on crises intervention. The amount of professional support that is available to the child in terms of assistance, therapies and equipment is usually determined by finance and in South Africa there has been huge discrepancies to different groups of people. It is often up to the parent to provide a learning support facilitator (Chambers, 2001).

Engelbrecht (1993) reports that educational psychologists in South Africa are searching for individual as well as group and classroom therapeutic interventions that are relatively culture-fair and free of bias in terms of

educational and ethnic background. Therapeutic interventions that focus on cognitive and metacognitive processes in order to facilitate learning and where cognitive, process-based instruction can be tied to academic tasks. Therapeutic interventions that focus not only on cognition but on affect as well.

2.10 ON-SITE SUPPORT SERVICES FOR THE ADHD LEARNER

Since there is currently no way to cure ADHD, the goal of treatment is to improve the individual's ability to cope. Besides medication and behaviour modification, this often requires a combination of treatments provided by specialists from different disciplines. Several on-site intervention approaches are available within these two special schools in this study :

2.10.1 Individual psychotherapy

A study undertaken by Strydom and du Plessis (2001) in South Africa, highlights what a shattering experience school can be for the ADHD learner. Frequently reprimanded and turned out, they lose any sense of self worth and fall even further behind in their work. Almost 60 % fail one grade in school and about one third fail to graduate from high school. The ADHD learner also experiences high rates of suspension and expulsion from school. Individual Psychotherapy works to help learners with ADHD to like and accept themselves despite their disorder.

Cognitive behavioural therapy, (CBT) is a one of the directive approaches used. Although first reports of the efficacy of this approach appeared in the 1970s, it was not until this decade that the initial claims of success with non-clinical populations of impulsive children were more fully tested in clinical populations of ADHD children. The results were disappointing and indicated some degree of improvement in impulsiveness on cognitive laboratory tasks but insufficient to be detected in teacher or parent ratings of school and home ADHD behaviours and certainly not as effective as stimulant medication (Brown, Wynne, & Medenis,1985). Barkley (1998) writes that often the temperamental and emotional qualities of ADHD tend to sabotage any therapy that requires co-operation and slowing down to think and that a few studies of CBT for ADHD children have demonstrated short-term improvement within restricted settings, but researchers note that these positive effects have not generalised to other settings. Other child-based treatments offered in special schools include group therapy and structured group activities, also known as social skills training.

2.10.2 Group psychotherapy

These therapies offer distractible and/or impulsive children emotional support and guidance within a controlled arena, helping them develop restraint and sensitivity to others, so that they're not regularly alienating their peers. The ADHD summer program developed by William Pelham at the Western Psychiatric Institute and Clinic in Pittsburgh, has become a model for this

kind of "milieu" treatment for ADHD. Children spend three hours each day in a classroom format. The first hour resembles an academic special-education class, in the second the children use computers and the third hour is an art class. In all three settings a behavioural system based on collecting or losing points operates. Points can be exchanged for privileges, social honours, or rewards at home. CBT is used both in the morning and afternoon classes, which is devoted to highly supervised sports and other recreation. Parents meet at least weekly with counsellors to review their child's progress and they receive training on how to implement reinforcement plans at home and at the child's regular school. During the school year, the Pittsburgh program continues on Saturdays-a day when many parents would like to give their child some unstructured time, perhaps without the usual dose of Ritalin. This program offers the ADHD child real-time practice in learning to cope with the demands of his world.

Paradoxically, most ADHD learners are exceptionally sensitive and their self-esteem is invariably low. They want to be popular, but often they are treated like annoying outcasts (Green & Chee, 1995). This combination of vulnerability, sensitivity and inadequate esteem have given rise to the formation of self-esteem group therapy at the special schools under study. The on-site educational psychologist manages therapy sessions.

2.10.3 Remedial help and other therapies

Besides behavioural and emotional problems, ADHD learners often experience co-ordination problems and up to 60% have some dysfunction of early speech development. Although these children usually acquire speech at the appropriate stage in the first year of life, they tend to be late in further extending and developing their expressive language. Eighty percent of children with ADHD have problems with reading, spelling, and writing, and 60% to 70% will become aggressive or develop behaviour problems (Strydom & du Plessis, 2001). ADHD learners benefit from therapies, which focus on these problems.

Both schools in this study offer on-site remedial help, occupational therapy and speech and language therapy. Most ADHD learners have poor handwriting, motor planning and co-ordination. Green and Chee (1995) say that while occupational therapy can help a learner improve in these areas, it will never turn the learner with two left feet into a world class athlete or graceful dancer. The speech and language therapist evaluates the child's linguistic abilities and is able to identify and quantify disorders of language processing as well as other language difficulties and to provide corrective therapy. With ADHD so intertwined with specific learning disabilities, many of these learners need extra help with reading, maths and language. Besides having the advantages of placement in a small class at a special school, some educators in this study also offer extra remedial help.

Researchers report that while a few intervention programs have demonstrated success, many remedial strategies are ineffective. Too often, they assume that the child is the problem. This one-sided view not only isolates the child from the context of the learning environment, but also precludes the exploration of environment-based solutions. Certainly, many frustrated teachers have experienced environmental constraints (limited time, lack of resources, and too many other learners) when attempting to meet individual learning needs. Reeve (1994) warns that unless the school environment is altered to make it match the unique constellation of needs presented by learners with ADHD, negative outcomes will continue.

2.11 ON-SITE SUPPORT SERVICES FOR THE PARENT OF THE ADHD LEARNER

On-site support services offered to the parent of the ADHD learner at the special schools under study include school-home communication, family therapy, parent skills training, support groups, talks by experts and newsletters.

2.11.1 School-home communication

McCain and Kelly (1993) report that daily 'home-school' notes have proven helpful for reducing disruptive behaviours, hyperactivity and inattention. This intervention entails writing daily educator notes that describe the learners

work habits, behaviours, and interaction patterns. Parents are asked to reward their child for behaving well at school and to help correct problems when they arise. "Home-school" notes should be incorporated into a 'reinforcement rich' home and school environment. Garber et al., (1990) says that parental support and expectations makes the most difference to any child's commitment to succeed in school.

2.11.2 Family therapy

It is the job of the school psychologist to identify and correct the underlying systemic problems by improving communication in the family, teaching problem-solving skills, and helping parents re-establish their position as authority figures. Family therapy may also be useful in identifying misunderstandings among family members and in helping parents work together to manage an ADHD child more effectively. In addition, joint sessions with parents and children can provide a forum in which the concerns of all can be addressed and compromises negotiated. Ingersoll (1998), highlights studies, which have shown that family therapy can help child behaviour and family interaction, in at least some families.

2.11.3 Parenting skills training

Therapists or educators employed in these special schools do the training and give parents tools and techniques for managing their child's behaviour e.g. time-out, quality time, system of rewards and penalties and techniques of structuring situations in ways that will allow their child to succeed. Parents may also learn to use stress management methods, such as meditation, relaxation techniques, and exercise to increase their own tolerance for frustration so that they can respond more calmly to their child's behaviour. Parent training also enables parents to cope more effectively when medication can't be used or is not elected. Even Russell Barkley (1998), who doubts that family environment much affects long-range outcomes for ADHD children, notes that "undertaking specific changes in our family environments and our parenting may produce immediate and short-term benefits, a reduction in stress for both parent and child, and a better quality of life."

2.11.4 Support Groups

These connect people who have common concerns. Members share frustrations and successes, referrals to qualified specialists, and information about what works, as well as their hopes for their children. There is strength in numbers and sharing experiences with others who have similar problems helps people know that they aren't alone.

2.12 THEORIES CONCEPTUALISING THE PRESENT STUDY

The theories most helpful in conceptualising this study are discussed below. The behaviour-analytical approach advocated by Teeter is one in which interventionists and caretakers become expert observers of children's behaviours, and utilise information about biological and environmental influences to assess those behaviours contextually. Based upon these informed observations, interventionists and caretakers are better able to determine appropriate measures to constrain further development of ADHD.

Teeter uses the familiar scaffolding of normal human development as a frame of reference and this developmental perspective lends support to his primary theoretical orientation, namely that ADHD is the result of multiple bi-directional interactions between genetic and environmental factors. The former are identified as structural, metabolic and neurochemical anomalies of the brain, while environmental factors may include any combination of the constantly shifting constellations of prenatal, postnatal, home, school, social and psychological dynamics. This "Transactional, Neurodevelopmental Model," posits that bi-directional interactions between genetic and environmental factors, particularly during infancy and early childhood (but continuing throughout the lifespan), affect brain development. Patterns of cerebral activation are established during the early months and years that determine emotional responses.

In this model, the child/caregiver and child/environment interactions produce metabolic and neurochemical responses in the brain that, in turn, are expressed in an individual's behaviour. When these interactions are favourable, positive patterns of cerebral activation are established. Teeter offers evidence that in children with ADHD however, brain anomalies may predispose the infant to negative traits and these may in turn, elicit feelings of inadequacy, impatience or even anger in caretakers and result in caretaker withdrawal from or avoidance of the child. Such a caretaker response dearly exacerbates the existing genetic predisposition and leads to further aberrant brain development. Appropriate caretaker countermeasures however, even in the presence of genetic anomalies can, in fact, turn the developmental tide and eventually result in positive patterns of cerebral activation. Clearly he is suggesting that it is the caretakers who have the capability to assess and alter interaction patterns with the aim of blocking further anomalous development. Thus, Teeter's model opens multiple pathways for interventions.

During this decade, Quay (1997) adopted Gray's (1982) neuropsychological model of anxiety to explain the origin of the poor inhibition evident in ADHD. Gray identified both a behavioural inhibition system as well as a behavioural activation system as being critical to understand emotion. He also stipulated mechanisms for basic, non-specific arousal and for the appraisal of incoming information that must be critical elements of any attempt to model the emotional functions of the brain.

According to this theory, signals of reward serve to increase activity in the behavioural activation system giving rise to approach behaviour and the maintenance of such behaviour. Active avoidance and escape from aversive consequences (negative reinforcement) likewise activate this system. Signals of impending punishment as well as frustrative non-reward actions increase activity in the behavioural inhibition system (BIS). Another system is the fight-flight system, which reacts to unconditioned punitive stimuli.

Quay's use of this model for ADHD shows that the impulsiveness characterising the disorder arises from diminished activity in the brain's BIS. This model predicts that those with ADHD should prove less sensitive to such signals, particularly in passive avoidance paradigms. The theory also specifies predictions that can be used to test and even falsify the model as it applies to ADHD. For instance, Quay predicted that there should be greater resistance to extinction following periods of continuous reinforcement in those with ADHD but less resistance when training conditions involve partial reward. They should also demonstrate a decreased ability to inhibit behaviour in passive avoidance paradigms when avoidance of the punishment is achieved through the inhibition of responses. Those with ADHD should also demonstrate diminished inhibition to signals of pain and novelty as well as to conditioned signals of punishment. Finally, Quay predicted increased rates of response by those with ADHD under fixed-interval or fixed ratio schedules of consequences. Some of these predictions are supported by subsequent research, others either remain to be

investigated more fully and rigorously or have not been supported by the available evidence. Nevertheless, the theory remains a viable one for explaining the origin of the inhibitory deficits of ADHD (Barkley, 1998).

Sergeant and van der Meere (1998) go further than Quay in concluding that the inhibitory deficit on ADHD is associated with additional deficiencies in motor pre-setting (response selection) and in effort or arousal. Barkley (1998) began his theory construction where these other paradigms left off - with the premise that ADHD does indeed represent a developmental delay in response inhibition processes. He then went on to show how behavioural inhibition is essential to effective execution of four executive functions that control the motor system in the initiation and performance of goal-directed, future-oriented behaviour. A number of treatment implications flow from this model for the management of ADHD. Chief among them seems to be the use of stimulant medications as a temporarily corrective treatment for the underlying neuropsychological deficit in behavioural inhibition. However, the use of stimulant medications need to be accompanied by the externalisation of sources of information aimed at controlling the individual's behaviour, and, along with it, sources of behavioural motivation as well. These modifications to the environment will not correct the underlying difficulties with inhibition and self-regulation but will partially compensate for them. Such modifications must be sustained over long periods if they are to continue to benefit the individual with ADHD. Thus, a chronic disability perspective seems more appropriate to the management of ADHD as it is for diabetes, than would be a

short-term curative model, such as the treatment of infection with antibiotics (Barkley, 1998).

2.13 CONCLUSION

Educators know what many professionals do not - that there is no one syndrome of ADHD but many and that ADHD rarely occurs in "pure" form by itself, but rather shows up entangled with several other problems such as learning disabilities or mood problems. The face of ADHD changes with the weather, inconstant and unpredictable. The treatment of ADHD, despite what may be serenely elucidated in various texts, remains a task of hard work and devotion. There is no easy solution for the management of ADHD in the classroom. After all is said and done, the effectiveness of any treatment for this disorder at school depends upon the knowledge and the persistence of the school and the individual educator.

If a plan of action based on a learner's strengths is put into place, success can be attained. The most effective approach is a support team, which might include a physician who administers and monitors medication and a psychologist or psychiatrist for individual and family therapy. Educators and parents working with the principal, therapists, and the school nurse support the learner during the day. Everyone working together provides the support needed for success throughout the life span (Boyles & Contadino,1999).

To conclude, as stated in the American Academy of Child and Adolescent Psychiatry Manual (1997), comparing various treatments of ADHD is complex because of the heterogeneity of children with the disorder, the inconsistency of treatment effects on different domains of functioning, and the complexity of learners' family, school and peer social environments. Chapter Two provided the context for this study, the next chapter will describe the research design, procedure, sampling technique and measures used in this study.

CHAPTER THREE

METHODOLOGY

3.1 AIMS OF THE STUDY

The aim of this study is to gain insight into the way educators from Grade 1 to Grade 7 in special schools organised the learning environment for learners diagnosed with ADHD. The research also sets out to investigate intervention strategies advocated by, or employed by educators in special schools, to manage this group of learners.

3.2 SETTING

The Kwa-Zulu Natal Department of Education and Culture was contacted in writing by the researcher. The nature, rationale and focus of the study were outlined (see Appendix 1). Permission to proceed with the research was obtained from the Department of Education and Culture (see Appendix 2).

This study is based in Kwa-Zulu Natal, more specifically a circuit in the North Durban region. The sample of educators were selectively chosen within a cluster sampling of special schools in the North Durban region. This particular circuit was selected on the basis of accessibility, time constraints,

expense and convenience. From a total of 20 special schools, 10% yielded 2 clusters of schools, which were selected. The respondent sample size was 31 and consisted of the complement of Junior School class educators in the participating schools.

3.3 MEASURING INSTRUMENT

3.3.1 Questionnaire

From a review of the literature, the researcher did not find a suitable instrument that would measure the significant issues pertinent to this study, therefore, a questionnaire was constructed. A researcher with experience in questionnaire design and data capture was consulted. Suggestions were made with regard to the framing of qualitative and quantitative questions. Face validity was obtained via the reading of the questionnaire by professionals with interest and experience in the field of ADHD (refer to Appendix 3).

A pilot study was conducted and a sample of 7 educators - one from each grade in the same primary school - grade 1 to grade 7 were selected randomly. They were approached as to whether they were prepared to participate in the piloting of the questionnaire. A meeting was scheduled (Thursday 5 April 2001) at 14:00 and the Board Room at the school was used as a venue. A reminder on the morning of the meeting was sent to each participant outlining the above. These educators and these trial

questionnaires were not included in the final run. The following issues were addressed at the meeting.

- The purpose and the rationale for research was discussed briefly as was the purpose of piloting a questionnaire. Confidentiality was stressed and contact details were on a voluntary basis.

- The structure of the questionnaire was perused by the sample and they were provided with some explanation of term's e.g. the difference between authoritarian and authoritative styles of teaching. It was a consideration to define the various teaching styles on the questionnaire.

- The questionnaire was given to the respondents the day before school broke up at the end of the first term so that they could complete it in their leisure and by so doing, provide an in - depth look at the following points which were tabulated and attached to the front of each respondents questionnaire. Participants were required to comment on whether the questionnaire extracted the relevant information, whether the physical layout of the questionnaire followed a logical sequence and made for easy reading as well as whether any terms were confusing and required further explanation. They were also asked to identify any questions which might present as ambiguous. Comments on the manageability of completing the questionnaire were posed and

finally, participants were encouraged to make further suggestions so as to improve on the face validity of the questionnaire (refer to Appendix 4).

- The questionnaire was returned the first week of the 2nd term and any ambiguous answers were discussed with the relevant respondent. This proved be a worthwhile exercise in clarifying and amending ambiguities in the questionnaire. The following were some of the changes effected.

- In Section One, the researcher changed the structure of question 1 to aid in data capturing. Question 3 was added to allow for identification of the category of special school. Other ways the educator might have acquired an understanding of ADHD was included in question 7. Question 10 addressed the need to gain further knowledge on the management of ADHD learners.

- In Section Two, question 1, definitions of each teaching style were included as some educators were not familiar with the terms. Questions 3, 4 and 5 in this section, were differentiated into managing an ADHD learner individually and in a group situation. As these involve varied interventions, this was suggested. Question 6 addressed the issue of medically diagnoses by a paediatrician or neurologist. Question 7 was omitted as educators saw it as a mere

repetition of questions 3, 4 and 5.

- In Section Three, question 6 was repositioned after question 1 as this allowed for a more logical progression. Furthermore, other interventions were included based on the educator's responses. In Question 5, 'Record Keeping" was included as a method of monitoring a learners medication. Question 7 in this section, saw Speech Therapy corrected to Speech and Language Therapy as was Remedial to Remedial Lessons. Newsletters were a choice included in Question 8 as it was viewed as a significant support service offered to the parents. Questions 8 and 10 were included by the researcher to provide a more in-depth look at on-site support services offered to the parent of an ADHD learner and as to whether educators feel that they would benefit from attending a workshop on the management of ADHD learners.

- Finally, the educators appealed for more lines on which to furnish their answers. The final draft consists of all the revisions made (refer to Appendix 5).

3.3.2 Details of the Questionnaire

In Section One (refer to Appendix 5), the following biographical data was asked of respondents:

- Age range
- Gender
- Name of school
- Current Grade taught
- Academic and Professional qualifications
- Teaching experience (total number of years and number of years teaching learners diagnosed with ADHD)
- Number of learners in class (total, learners diagnosed with ADHD and learners diagnosed with ADHD currently on medication)

Section Two consisted of both open-ended and close-ended questions. The section focused on educators' teaching style, classroom management techniques and the management of ADHD learner's physical environment viz. the classroom.

Section Three focused on the intervention strategies employed by educators in special schools to accommodate ADHD learners in the classroom, around the school and on the playground. Administering and monitoring the medication of learners diagnosed with ADHD was also investigated, as were educator's insights into the side-effects of medication. A review of on-site support services offered to both the learner and parents concluded the questionnaire.

3.4 CONCLUSION

It was anticipated that the questionnaire would inform the critical questions of the study which were to investigate the management of learners diagnosed with ADHD in special schools.

The critical questions of this research are:

- How do special schools organise the learning environment for learners diagnosed with ADHD?
- What types of interventions are in place at special schools to manage learners diagnosed with ADHD?

An in-depth discussion of the research methodology and questionnaire was the focus of this chapter. Chapter Four will look at the method of data collection and analysis.

CHAPTER FOUR

METHOD OF DATA COLLECTION AND ANALYSIS OF DATA

4.1 PURPOSE OF THE STUDY

The purpose of this study was to investigate the management of learners diagnosed with ADHD in special schools.

The objectives of the study therefore are:

- To examine whether the organisational structure of a special school is an effective learning environment for ADHD learners.
- To investigate the interventions administered to manage ADHD learners in special schools both in the classroom and around the school.

4.2 METHOD OF DATA COLLECTION

A letter was written to the principal of one of the two selected schools and a verbal request was made to the principal of the other school asking permission to conduct research in their schools and outlining the area of interest to be studied. Permission was granted by both of the principals, one verbally and one in writing (refer to Appendix 6). Arrangements were made to distribute the questionnaire to all class educators at these special

schools from Grade One to Grade Seven and to collect them after a given period (refer to Appendix 7). This took place during May 2001. A set of questionnaires was delivered (according to the number of class educators from Grade One to Grade Seven) to each participating school and collected from them at a predetermined date and time. A fax was sent to one of the schools as a reminder of the collection date (see Appendix 8). It was not necessary to follow the same procedure with the other school as the researcher was on site. The introductory page of the questionnaire stated that any contact details were of a voluntary nature and confidentiality was assured.

4.3 QUESTIONNAIRE RETURN RATE

The two special schools chosen to participate in the study, yielded a sample of 31. All respondents returned their questionnaire, the percentage of the return rate being 100%. Respondent contact details were of a voluntary nature and out of a total of 31 participants, 10 supplied these. The researcher found it necessary to call three of the respondents to fill in some answers which were overlooked or to clarify specific answers. This proved to be a fruitful exercise as it increased the accuracy of the data. Data was collected without any problems.

4.4 ANALYSIS OF DATA

The data obtained for this study was analysed qualitatively. The Statistical Package for Social Scientists (SPSS) was utilised in data analysis. In this regard, editing and coding of raw data were undertaken. Logically inconsistent data was identified and excluded from analysis. Non-response items were identified in order to determine the missing values utilised in data coding. Following this, a coding template was established in order to capture the key coding instructions for each variable, e.g. how responses related to variables, labels of variables, whether a particular variable was numeric or alphanumeric. All questions were pre-coded prior to data capture in order to reduce errors resulting from incorrect data entry.

4.5 QUESTIONNAIRE BREAKDOWN

4.5.1 Section One : Biographical details of educators

Educators were required to provide information on the following : age, gender, type of school currently teaching at, grade presently teaching and their academic and professional qualifications. Section One also questioned educators on their total years of teaching experience, the number of years teaching learners diagnosed with ADHD, the total number of learners in the respondents class in 2001, the total number of learners diagnosed with ADHD and the number of learners with ADHD currently on medication. Frequencies were calculated for the total sample for all questions in Section

One except for Question 1.3 and 1.9. These frequencies are reported as valid percentages and analysis of the data yielded the following results as indicated in Table 4.1, reflects the age range of the respondents.

Table 4.1 **Age of Educators**

Age	Frequency	Percent
20 - 29 years	4	13
30 - 39 years	10	32
40 - 49 years	10	32
50 + years	6	19
Total	30	99

Valid cases : 31 **Missing cases : 1**

An equal number of educators were in the age range 30 - 39 and 40 - 49, this accounted for the majority of educators i.e. 64% of the sample of 30. Only 13% of educators fell in the 20 to 29 year age group.

With regard to gender, 97% of the respondents were female with 3% being male. Fifty-two percent of the respondents taught at a short term school for learners with special educational needs (LSEN) which included learners from Grade One to Grade Seven ; 48% of the respondents taught at a long term school for learners with special needs. This included learners from Grade One to Grade Twelve. For the purpose of this study, only class educators from Grades One to Grades Seven were included in the sample.

Table 4.2 lists the grades that the respondents in this study are currently teaching.

Table 4.2 Grade currently taught by Educators in the Sample

Grade	Number of educators teaching Grade	Percent
1	3	10
2	3	10
3	6	19
4	8	26
5	4	13
6	4	13
7	3	10
Total	31	100

The table indicates the distribution of educators surveyed according to the grades they are teaching in. Grade 4 educators accounted for 26 % of the sample; 19 % of the sample are currently teaching in Grade 3 classes. Table 4.3 shows the academic qualifications of the educators in this study.

Table 4.3 Academic qualifications of educators

Degree	Frequency	Percent
Bachelors	6	19
Honours	3	10
Total	9	29

- **Please note that respondents may have included more than one option.**

The professional qualifications of educators in the sample indicated that 19% had Bachelors degrees and 10% had honours degrees. Griessel et al., (1995) note that one of the most important facts which should be brought home to a prospective educator is that she should ensure that she remains up to date with all the latest developments in the field of education and in fact, always remains a student. Table 4.4 reflects the professional qualifications of the respondents.

Table 4.4 Professional qualifications of educators

Diploma	Frequency	Percent
3 year	5	16
4 year	10	32
Post Grad.	8	26
Other	7	23
Total	30	99

Valid cases : 31 Missing cases : 1

- ***Please note that respondents may have included more than one option.***

The table indicates that 26% of the respondents have a post graduate qualification, one-third of the respondents possess a 4 year teaching diploma, which is twice the amount of respondents who possess a 3 year teaching diploma (16%). Table 4.5 focuses on educator's years of teaching experience as well as their number of years of teaching learners diagnosed with ADHD.

Table 4.5 Teaching experience

Description	Mean	Minimum	Maximum
Total years of teaching experience	16	4	33
Years of teaching learners diagnosed with ADHD	6	1	19

The mean (average) number of years of teaching experience was 16 years, with a minimum of 4 years and a maximum of 33 years. Likewise, the number of years educators have been teaching learners diagnosed with ADHD ranged from 1 to 19 years with the mean being 6 years. Table 4.6 includes the mean number of learners in each class, the number of learners in a class diagnosed with ADHD and those who are currently on medication.

Table 4.6 Learner information

	Mean	Minimum	Maximum
Number of learners in class in 2001	14	9	21
Number of learners in class in 2001 diagnosed with ADHD	9	3	20
Number of learners with ADHD currently on medication	5	2	11

The average number of learners in a class was 14, the largest classes consisting of 21 learners and the smallest classes only having 9 learners. The average number of learners in a class diagnosed with ADHD was 9 with a minimum number of 3 and a maximum number of 20. If 9 out of 14 learners in a class have been diagnosed with ADHD, this means that 64% of learners in a class present with these symptoms. Furthermore, an average of 5 learners in each class are diagnosed with ADHD and are currently on medication. Therefore in an average class of 14 learners, 9 of them have been diagnosed with ADHD, and 5 of these 9 learners are on medication. This accounts for 36 % of the learners in each class being on medication.

In Table 4.7, the educators identify how they acquired an understanding of ADHD.

Table 4.7 Acquisition of an understanding of ADHD

	Frequency	Percent
Degree	3	10
Workshops	25	81
Internet	13	42
Experience	26	84
Diploma	13	42
Literature	28	91
Other	3	10

- **Please note that respondents may have selected more than one option.**

Data indicates that 84% of these respondents acquired an understanding of ADHD through experience. Forty-two percent of the educators are now using the Internet to access knowledge on this disorder. Workshops tend to play a significant role in the development of a deeper understanding of ADHD. Under "Other", 10% of the respondents said that they were currently exposed to this topic through their Remedial Education Diploma they were undertaking or gained a deeper insight into this disorder by talking and exchanging ideas with other educators who were also teaching learners diagnosed with ADHD.

Forty-eight percent of the respondents replied that they had not attended specific training in the management of learners diagnosed with ADHD whereas 39% said that they had attended specific training. Courses on the management of ADHD learners which educators had attended during the past three years were either in-service courses run at their special school or symposiums arranged by The Association of Professional Educators of Kwa-Zulu - Natal (APEK), The Remedial Teachers Association or the Association for The Learning Disabled. Specialist Paediatricians and Child Neurologists as well as psychologists with an interest in this disorder usually presented these courses. It was encouraging to note that 97% of the respondents said that they would benefit from attending a workshop on ADHD.

4.5.2 Section Two : The organisational structure

The essence of Section Two of the questionnaire (refer to Appendix 5) was on the organisational structure of a classroom in a special school which accommodates ADHD learners. Focus was on educators' teaching style, classroom management techniques and the physical environment. Most questions in this section required qualitative analysis with the exception of questions 2.1 and 2.3 for which frequencies were calculated. Table 4.8 identifies the educator's varied teaching styles.

Table 4.8 Educator's teaching style

Style	Frequency	Percent
Authoritarian	1	4
Authoritative	28	91
Democratic	25	81
Laissez - Faire	1	3
Other	1	3

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

The most common style of teaching was authoritative with 28 respondents selecting this option followed by democratic, with 25 respondents selecting this style. One respondent said that she adopted any one of the above styles depending on the situation.

- For Questions 2.1.2 through to 2.2.7, in order to establish the range of reasons offered and the most frequent responses, the researcher categorised the educators responses according to the following : how teaching style impacts on ADHD learners, strategies used by educators to manage an inattentive learner, an impulsive learner and a hyperactive learner working both independently and in a group, and finally the skills used to manage learners not medically diagnosed with ADHD.

- Reasons and strategies were noted down as they were presented and frequencies established for each reason. Similar reasons and strategies were combined e.g. "Time activities" was combined with "Time limits" to indicate an intervention strategy for managing ADHD learners in the classroom.

- Approximate percentages were estimated, as it was not possible to categorise each response strictly.

The responses are presented by referring to the questions in the survey questionnaire.

Question 2.1.2

- How does your teaching style impact on the ADHD learner?

Nineteen percent of the educators said that by adopting their specific teaching style, the learner knows what is expected of him, but is still seen as an unique individual whose contributions are important and significant. As this type of learner thrives on routine, structure and firm boundaries, 19% of the respondents advocated a more authoritarian style of teaching.

Question 2.2.1

- How do you manage an inattentive learner working independently?

Thirty-two percent identified goal setting and close supervision by providing them with a very structured learning environment that involved special seating arrangements, proximity control and a "buddy system". Nineteen percent of the educators recommended educator assistance on a regular basis. Thirteen percent said that time limits and extensions in some instances could be allocated as well as work being more visual in nature and more novel and interesting in presentation. Six percent recommended breaking tasks into more manageable bits and keeping written work to a minimum.

Question 2.2.2

- How do you manage an inattentive learner working in a group?

Twenty-three percent of the educators saw teacher intervention as the most effective strategy used to manage an inattentive learner working in a group. Thirteen percent of educators mentioned selecting group members strategically e.g. placing an ADHD learner in a group with competent and conscientious learners, and giving him a specific responsibility within that group. Ten percent included constant monitoring, peer evaluation of group

members, and self-evaluation of performance during group activities. Ten percent also identified ways to bring learners back in focus by getting them to repeat instructions or questioning them about what was under discussion.

Question 2.2.3

- How do you manage an impulsive learner working independently?

Impulsive learners working independently, according to educators, benefit from constant monitoring and firm boundaries in order to keep them focused. This was the view held by 13% of the respondents. A further 13% recommended assignments appearing numerically on the chalkboard so as to remind learners of the necessary tasks to be undertaken. Time limits were used for each task, which were manageable and novel so as to keep the learner's attention. Three educators stressed the need to work on the positive and praise good behaviour and 10% of them advocated the use of incentives for completed/acceptable tasks. Six percent recommended the use of certain behaviour modification techniques e.g. Stop-Think-Do, charting on and off task behaviour and self-evaluation to name a few.

Question 2.2.4

- How do you manage impulsive learners working in a group?

Impulsive learners working in a group, according to 16% of the respondents, also need clear parameters and instructions and through both self and peer evaluations, can learn to contribute to group tasks in a positive manner. Ten percent of the educators recommended giving these impulsive types a specific duty or a leadership role so as to be accountable for the groups performance. Furthermore, 3% of the respondents said that ADHD learners are inclined to perform even better if they are given a role which requires some form of movement.

Question 2.2.5

- How do you manage a hyperactive learner working independently?

Twenty-three percent of respondents replied that hyperactive learners working independently thrive within a structured environment where goals are set and supervision is available if necessary. Ten percent recommended self-evaluation and "On-Off Task Charts" as useful methods of monitoring hyperactive learners. Six percent of the educators set strict physical and spatial limits and advocated that these type of learners benefit from being seated on their own. A further 6% recognised that visual stimuli around the classroom which could cause distractions, should be kept to a minimum. Six percent recommended allocating tasks that are interesting and one educator even stated that some of the daily tasks should involve a certain amount of movement.

Question 2.2.6

- How do you manage a hyperactive learner working in a group?

Hyperactive learners working in a group also require a certain amount of educator supervision with a great deal of structure, according to 10% of the respondents. Thirteen percent of the educators recommended giving these learners a central role or one which encourages active involvement. Ten percent said that group members should be carefully selected, and include members who would be good role models.

Question 2.2.7

- List skills that you use to manage learners not medically diagnosed with ADHD?

This question on the skills used to manage learners not medically diagnosed with ADHD proved to be ambiguous as some educators interpreted it as those learners presenting with ADHD who had not been medically diagnosed with this disorder, whereas other educators interpreted the question as those learners who had a range of different learning disabilities. Despite this ambiguity, the educators who attempted to answer this question, mentioned many positive (48%) and negative consequences (6%) plus 16% of the respondents saw behaviour modification as also playing a role.

Question 2.3.1

- Describe where your learners diagnosed with ADHD are seated in your classroom.

The response to the question on the physical seating of ADHD learners varied. Twenty-three percent of the educators advocated ADHD learners been positioned in front near them. Sixteen percent said they need to be in single desks and away from any physical distractions. Ten percent of the respondents recommended seating the ADHD learner next to a quieter learner who has a good work ethic. Seating at the back of the classroom was also mentioned by one educator as well as changing seating positions about once every two weeks.

Question 2.3.1

- Why do you seat your ADHD learners in these places?

Reasons as to why ADHD learners are seated accordingly, are to prevent them from being distracted (26% response) , for proximity control (10%), to be able to manage them more efficiently and to make the learner feel more secure in his learning environment. Six percent of the educators recommended that ADHD learners be seated in pairs or in groups as this encourages group socialisation and enables them to learn from and help

each other. Group-work can provide a positive working environment according to 6% of the respondents and good role models can be emulated. Seating is allocated based on compatibility with peers and so that the ADHD learner can be provided with equal visual and audio stimulation.

Question 2.3.3

- Do you have any other areas in your classroom that may facilitate the management of these learners?

Forty-eight percent of the educators said that they did not have other areas in their classrooms which may facilitate the management of ADHD learners whereas 48% said that they did.

Question 2.3.4

- Describe these areas?

Thirty-two percent of educators identified other useful areas as being the reading/library corner, the games/play corner or the quiet/time-out corner. Nineteen percent advocated seating the learner at the educators desk or placing their desk adjacent to the educators desk. Ten percent of educators recommended that ADHD learners should be seated away from other learners if at all possible e.g. a room off the classroom.

4.5.3 Section Three : Interventions

Section Three of the questionnaire homed in on interventions which educators utilise in their classrooms as well as around the school and on the playground to manage learners diagnosed with ADHD. Four questions in this section covered the medical management of these learners. On-site support services for the learner and for the parents of the learner diagnosed with ADHD were also dealt with. Frequencies were calculated for every question in Section Three (refer to Appendix 5) and are reported as valid percentages. Table 4.9 reflects the classroom interventions which educators utilise for learners diagnosed with ADHD.

Table 4.9 Classroom intervention strategies

Interventions	Frequency	Percent
Charting	14	45
Peer Tutoring	17	55
Behaviour modification	28	91
Time-out	23	75
Group work	22	71
Proximity control	8	26
Contracts	12	39
Preventative cueing	16	52
Other	6	19

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

Behaviour modification techniques are undoubtedly the most popular interventions used in the classroom, with this group of respondents, with 91% of them indicating so. Time-out is utilised by 75% of the educators, while 71% of the educators see group-work as playing some sort of role in managing an ADHD learner in the classroom. Other intervention strategies mentioned are individual tutoring, self-evaluation, private discussions, highlighting learners good points and building on their stronger abilities. According to Pfiffner and Barkley (1998), careful research has shown that prudent negative consequences, including response cost and time-out, are particularly effective for learners with ADHD when combined with rewarding contingencies. Table 4.10 reflects the intervention strategies utilised by educators for managing ADHD learners around the school and playground.

Table 4.10 Interventions utilised around the school

Interventions	Frequency	Percent
Time-out	21	68
Detention	15	49
Verbal reprimanding	27	87
Strong staff presence	17	55
Designated areas of play	21	68
Other	4	13

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

Verbal reprimanding appeared to be the most popular intervention used to manage these learners around the school with 87 % of the respondents selecting this, followed by time-out and designated areas of play recommended by 68% of the respondents. Thirteen percent mentioned other interventions which include the use of prefects, and giving learners specific physical restrictions as well as specific game options. Table 4. 11 identifies the personnel who administer the medication to the ADHD learners.

Table 4.11 Administration of medication to ADHD learners

Medication administration	Frequency	Percent
Parent at home	21	68
School nurse	0	0
Class educator	24	77
Other	12	39

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

Seventy-seven percent of the educators indicated that they personally administered the medication, 39% identified others and named Head of Departments or therapists . There did not appear to be a school nurse at either of these special schools.

One hundred percent of the respondents replied that medication did help the ADHD learner. Twenty-three percent saw improved levels of concentration whereas 16% noticed that the learner was more focused on tasks in hand. Ten percent of the respondents recognised improved standards of work and performance. Other positive changes recorded were a more positive attitude towards school, improved self-control, an increase in self-confidence and learners presenting with a generally happier disposition. Eighty-one percent of the respondents said that they were aware of the side-effects of medication whereas 19% said they were not. Educators listed that they were aware of the following side-effects of medication : loss of appetite (77%), headaches (19%), emotional upheavals, mood swings, depression and tearfulness (16% respectively). Other side-effects identified were insomnia (10%), stomach cramps and nausea (13%) ,tics (6%) , thirst (3%), tremors (3%) , petit mal and the manifestation of Tourettes syndrome (3% respectively).

Barkley, McMurray, Edelbrock, and Robbins (in Barkley, 1998) conducted one of the most comprehensive studies of the prevalence of parent and teacher reported side-effects to Ritalin. More than half the sample exhibited decreased appetite, insomnia, anxiety, irritability, or proneness to crying. In most cases, the severity of these side-effects has been shown to be quite mild. Stomach aches and headaches were reported in about a third of the participants, but these were usually of mild severity as well. Table 4.12 lists the different methods educators use to monitor the medication of ADHD learners.

Table 4.12 Educators monitoring of medication

Medication Monitoring	Frequency	Percent
Observation	24	77
Charting	5	16
Record keeping	24	77
Other	8	26

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

Observation and record keeping proved to be the most popular methods of monitoring medication, claiming 77% of the respondents votes with charting only practised by only 16% of the respondents. Twenty-six percent of the educators identified other methods of monitoring ADHD learners reaction to medication, such as feedback to the paediatrician every four months (6%), filling in a Connors report every three months (3%), ongoing discussions with other educators who teach that specific learner (3%) , consultation with the parents and a comparison of the ADHD learners class work every term (3 %). Power et al.(1994) state that school personnel gather information which is valuable in determining the appropriateness of medication and can readily obtain data to ascertain the day-to-day effects and side-effects of medication.

Table 4.13 lists the on-site support services offered to the ADHD learner.

Table 4.13 On-site support services offered to the ADHD learner

	Frequency	Percent
Individual Psychotherapy	26	84
Speech & Language Therapy	29	94
Occupational Therapy	30	97
Group Psychotherapy	25	81
Remedial Lessons	29	94
Other	4	13

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

Most of the educators were aware of the on-site support services offered to learners diagnosed with ADHD including individual psychotherapy, speech and language therapy, occupational therapy, group therapy and remedial lessons. Thirteen percent included other services such as small classes and committed educators.

Fifty-eight percent of the respondents acknowledged that Parent Training was on offer at their special school whereas 29% said that it was not offered. Table 4.14 lists the support services offered to the parents of learners diagnosed with ADHD.

Table 4.14 Support services offered to the parents of learners diagnosed with ADHD

	Frequency	Percent
Educator-Parent communication	28	90
Talks by 'experts'	26	84
Parent support group	19	61
Newsletters	20	65
Other	4	13

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

Ninety percent of the educators in this study recognised educator/parent communication as a significant support service. Eighty-four percent listed talks by 'experts' as being another aspect of support for the parents and 61% identified the parent support group as playing a role in assisting the parents of learners diagnosed with ADHD. Sixty-five percent saw Newsletters offering another form of parental support. Thirteen percent included other services such as Psychotherapy, membership to the Association for the Learning Disabled and following Home Programmes devised by educators.

Ninety-seven percent of the sample said that they would benefit from attending a workshop on the management of ADHD learners. One of the respondents failed to fill in their choice.

It appears that educators are in dire need of some kind of professional development workshops to equip them with the skills and intervention strategies which they can utilise in their classrooms. As Hallowell and Ratey (1995) state,

"The treatment of ADHD is not passive, not something one reclines to receive. Rather, the treatment is an active process involving work and study."

This chapter looked at the method of data collection and an analysis of data. A discussion of the results will follow in Chapter Five.

CHAPTER FIVE

DISCUSSION

This chapter discusses the results presented in Chapter Four in the light of the previous research. The purpose of this study was to examine the management of learners diagnosed with ADHD in special schools. The questionnaires were analysed with this purpose in mind. The critical questions, which guided this research and which have been previously stated, are as follows:

- Is the organisational structure of a special school an effective learning environment for ADHD learners?

- What interventions are administered to manage learners diagnosed with ADHD both in the classroom and around the school?

The respondents biographical data is dealt with first, followed by a discussion on trends and patterns of thinking that emerged from the study. These are reported on in terms of the critical questions posed in the introductory chapter.

5. 1 BIOGRAPHICAL DATA

From the biographical data received, it appears that the majority of educators in this phase fall in the 30 and 49 year age bracket. This could be advantageous for the ADHD learner as these educators are more likely to possess a wealth of experience. Thirty of the 31 respondents were female with only one respondent in the sample being male. According to Serfontein (1990), boys with ADHD, because of the various emotional difficulties, are constantly testing the limits of discipline and control and it is very difficult for the mother, who may be in the front line, to constantly meet these challenges. The regular input of a father into, not only the behavioural management, but also the emotional development of the child is important. A point to consider is that since ADHD is predominantly a male disorder, more male educators should be trained to deal with these particular learners.

If in South Africa, the prevalence rate of ADHD is one in every ten children (Fairall & Rogers, 2001) , then it would be expected that educators should have received a fair amount of insight and training into this disorder. However, only 52% of the respondents (10% with degrees and 42% with diplomas) indicated that they had received any undergraduate training on ADHD. Several studies demonstrated that educators did not receive adequate training concerning ADHD during their undergraduate education. Ninety seven percent of the educators expressed a strong desire for additional workshops addressing ADHD and 100% of the respondents

indicated that they would benefit from attending a workshop on the management of learners diagnosed with ADHD.

Train (1996) states that if all educators were trained to focus on children rather than their subject major, a great many problems could be avoided. He continues to comment that teachers' training courses should embrace preventative techniques and give emphasis to the fact that educators are employed because children need them as people. If the behaviour of children was seen as the primary concern of teachers rather than a secondary matter, then the delivery of the curriculum would proceed much more smoothly. Difficult children would not be seen as a nuisance, their needs would be met, and others would benefit as a result. Furthermore, educators should be trained to recognise the symptoms of ADHD and should learn how to deal with a child who presents with these symptoms and how to manage them in the school environment effectively.

Barkley (1998), states that the educator's knowledge of and attitude about ADHD, is critical. When teachers have a poor grasp of the nature, course, outcome, and causes of this disorder and misperceptions about appropriate therapies, little is gained from attempting to establish behaviour management programs within that classroom. On the other hand, a positive teacher-learner relationship, based on teacher understanding of the learner and the disorder, may improve academic and social functioning.

In this study, 84% of the respondents indicated that they acquired an understanding of ADHD through experience. The years of teaching learners diagnosed with ADHD ranged from I to 19 years with an average of 6 years. Rosner (1993) maintains that the best kind of teacher for this type of child is one who tends to be pedantic rather than stimulating; someone who is patient, explains things slowly and adequately and clarifies the explanation if necessary; someone who accepts the fact that the child will have bad days when there appears that there is no hope as well as good days. This educator must be able to motivate the child, gain his trust, and inspire his continued effort in the face of periodic failure. Educators like this are not easy to find, but they do exist. Usually they are very experienced; only rarely are they beginners. The kind of knowledge and skills they have are not acquired in teacher preparation programs - they are the outcome of repeated experiences that are instructive because the educator was motivated to learn, to profit from her mistakes and to analyse her successes.

Eighty-one percent of the educators saw in-service courses as a way of acquiring an understanding of ADHD. Barkley (1998) comments that one-day in-service courses, although useful for imparting information about the disorder, are not usually sufficient for training educators to implement behaviour modification programs. It can be effective if followed up by ongoing consultation or technical support.

5.2 IS THE ORGANISATIONAL STRUCTURE OF A SPECIAL SCHOOL AN EFFECTIVE LEARNING ENVIRONMENT FOR ADHD LEARNERS?

Once ADHD children enter school, a major social burden is placed on them that will last at least the next 12 years-that burden is formal, compulsory education. Studies suggest that it is the area of greatest impact on the children's ADHD and will create the greatest source of distress for many of them. The ability to sit still, attend, listen, obey, inhibit impulsive behaviour, co-operate, organise actions, and follow through on instructions as well as share, play well, and interact pleasantly with other children is essential to negotiating a successful academic career beyond those cognitive and achievement skills needed to master the curriculum itself (Comfort,1992).

As previously noted, learners with ADHD have many problems with attention (e.g. paying attention, selecting what to pay attention to, sustaining attention, and divided attention). Yehle (1998), states that either these difficulties with attention can be exacerbated by the child's environment, or appropriate changes in the environment can lead to an increase in positive academic outcomes for the child. To be successful academically, students with ADHD must focus their attention on the teacher and lesson instead of the abundant other stimulating items in and around the classroom.

Barkely (1995) points out that traditional classrooms are not very user-friendly to active, impulsive ADHD learners who love change, excitement, and

novelty. Physically enclosed classrooms (with four walls and a door) are often recommended for ADHD learners over classrooms that do not have these physical barriers (i.e. "open" classrooms). An open classroom is usually noisier and contains more visual distractions because children can often see and hear the ongoing activities in nearby classes. In light of research showing that noisy environments are associated with less task attention and higher rates of negative verbalisations among hyperactive learners, open classrooms appear to be less appropriate for ADHD learners.

Educators indicated that their total roll of their classes ranged from 14 to 21 learners with an average of 9 learners per class. This augurs well for the ADHD learner, as the learning disabled child needs explicit, unambiguous instruction that is offered in limited proportions and accompanied by more than the usual amount of drill and practice. Rosner (1993) believes that this cannot be done in a classroom where twenty-five children congregate with one teacher. This however, will be the reality for these special needs learners in South Africa once they return to mainstream where the classes can include more than 35 learners.

Ninety-one percent of the educators in this research identified their teaching style as being authoritative (i.e. firm but flexible). By adopting a more authoritative style, the learner who thrives on routine, knows what is expected of him. His learning environment is relatively structured, boundaries are firm, rules administered and a sense of discipline prevails. The atmosphere

inculcated is positive which permits the learner to feel secure and comfortable. The educators' style is encouraging and empathic. On the other hand, the more democratic styles allow for flexibility where compromises can be reached and accommodations can be made which allow a wide range of stimuli to reach the ADHD learner. The key is that each child is seen as unique and his contributions are seen as important and are likewise taken into account. He is encouraged to believe in his own capabilities and abilities.

One respondent in the sample said that she adopted any one of the teaching styles depending on the needs of the learner and the situation. Yehle (1998) suggests that each learner with ADHD presents a unique set of characteristics. The strategies and accommodations that are imperative for the academic success of one learner with ADHD may be completely different for another. Therefore, educators need to select from a variety of strategies and accommodations to meet the needs of their particular learner. Adopting a functional approach, where strategies and accommodations are tailored to meet the academic and behavioural needs of learners, will assist educators in selecting only the necessary interventions.

Maintaining any learner's attention during independent seatwork can prove a labourious task. A successful intervention is moving the ADHD child's desk away from other learners to an area closer to the educator. This procedure not only reduces the child's access to peer reinforcement of his disruptive

behaviour but also allows the educator to better monitor the learner's behaviour. Twenty-three percent of the respondents advocated this positioning. Sixteen percent said that it may also be beneficial for ADHD learners to have individual and separate desks. Twenty-six percent of the educators stated that they seated ADHD learners strategically so as to prevent them from being distracted. Altering seating arrangements in this manner may sometimes be as effective as a reinforcement program, in increasing appropriate classroom behaviour (Barkley, 1998). Yehle (1998) maintains however, that if the front of the classroom is a high traffic area, it might be wise to choose another appropriate spot.

5.3 WHAT INTERVENTIONS ARE ADMINISTERED TO MANAGE ADHD LEARNERS IN SPECIAL SCHOOLS?

"Don't let learners use ADHD as a cop-out. Teach them ways to control their urges, and use school as a place to practice being in control ."

Yehle (1998)

Interventions for learners with ADHD is a critical aspect of any treatment programme. Behaviour management is universally recognised as a critical component of any intervention program for children with behavioural disorders. In this study, 91% of the respondents listed behavioural modification as a vital intervention utilised in their classrooms. According to Barkley (1998), in the short term, behavioural interventions improve target

behaviours, social skills and academic performance but are less useful in reducing hyperactivity, inattention or impulsivity. Specially arranged interventions for ADHD children should be required across school settings and for extended periods over the course of their education given the developmentally handicapping nature of their disorder.

Teacher-administered consequences continue to be the most commonly used behavioural interventions with ADHD learners. A combination of positive consequences (praise, tangible rewards, token economies) and negative consequences (reprimands, response cost, time-out) has been shown to be optimal. However, their success with ADHD learners is highly dependent on how and when they are administered. Consequences that are immediate, brief, consistent, salient, and in the case of positive consequences, delivered frequently seem to be the most effective (Barkley, 1998). According to Anhalt, McNeil and Bahl (1998), positive consequences are often effective in decreasing activity level, increasing amount of time spent on-task, and improving the academic performance of ADHD learners.

According to 32% of the respondents, managing an inattentive learner working independently involves goal setting and close supervision by providing them with a very structured environment involving special seating arrangements, proximity control and peer interventions. Peer tutoring represents the most recent advance in the utilisation of peers as a part of the intervention process for ADHD children. Peer tutoring focuses specifically

improving academic skills and provides a learning environment well-suited to the needs of ADHD learners i.e. involves immediate, frequent feedback and active responding at the learner's pace. Recent studies support this approach with positive effects on both classroom behaviour and academic performance. Barkley (1998) reports that both teachers and learners have rated peer tutoring favourably furthermore, peer tutoring is probably most effective for ADHD learners when they are paired with well-behaved and conscientious classmates. He adds that efforts to involve peers in modifying the disruptive and intrusive behaviour of ADHD children have focused on strategies to discourage peers from reinforcing their classmate's inappropriate behaviour and instead to encourage their attention to positive, pro-social behaviour. Training children to alter their interactions with peers not only improves peer behaviour, but also directly improves the behaviour of children implementing the intervention. This would seem beneficial for ADHD children who are at such great risk for poor peer relations.

It has been noted that peer reinforcement systems may facilitate generalisation because peers may function as cues for appropriate behaviour in multiple settings. However, recent evidence shows that involving peers by having them correct only negative behaviour of ADHD learners can exacerbate the problem, presumably due to the reinforcing value of peer attention. Due to these concerns, it is advisable that peers not be involved in implementing any punishment programs. In addition, when peers are utilised as change agents, they should be carefully trained and supervised and

contingencies should be provided for accurate ratings (Barkley, 1998).

One educator replied that short breaks should be interspersed with classroom lectures and academic periods so as to keep the inattentive learner interested. The reasoning for these breaks, also known as "work bursts", being to provide an alternative to the monotonous nature of many academic tasks. Anhalt et al., (1998) defines a work burst as a short interval (5 to 20 minutes) of intense concentration followed immediately by a break or reward for those learners who worked hard and remained quiet during the burst.

Ten percent of the educators included self-evaluation as a strategy they used to manage an inattentive learner working in a group. This involves learners monitoring and evaluating their own academic and social behaviour and rewarding themselves (often with tokens or points) based on those evaluations. According to the readings, these strategies have had some success with ADHD learners , although the effects of these interventions are not as strong, as durable, or as generalisable as was once expected and are not superior to traditional behavioural programs.

Thirteen percent of the respondents said that impulsive learners working independently benefited from constant monitoring and having firm boundaries in order to keep them focused. The repetition of instructions was also highlighted. On tasks in which instructions are repeated frequently to the ADHD child, problems with sustained responses are lessened. According to

Barkley (1998), research has shown that when directions for a laboratory task or psychological test are repeated by the examiner, better performance is derived from ADHD children. However, it is not clear whether this is specific to these laboratory tasks and the novel examiner or can be generalised to activities done with routine caregivers.

Rules and instructions provided to ADHD children must be clear, brief and often delivered through more visible and external modes of presentation than is required for the management of normal children. Stating directions clearly, having the child repeat them out loud, having the child repeat them softly to themselves while following through on the instruction and displaying sets of rules or rule-prompts (e.g. stop signs, big eyes, and big ears for "stop, look, and listen" reminders) prominently throughout the classroom are essential to proper management of ADHD children (Barkley, 1998). It is a good idea to provide both written an oral instructions and by paraphrasing important directions two or three times (Yehle, 1998).

Impulsive learners working in a group frequently struggle to remain on task. One of the respondents mentioned redirecting the educator's attention as a method of helping to keep this type of learner focused. This refers to the practice of purposely using attention to help learners remain on-task and redirect those who are not. Researchers recognise that praise and other forms of positive teacher attention (smiles, nods, pats on the back) have documented positive effects on ADHD learners. Withdrawal of positive

educator attention contingent upon undesirable behaviour (i.e. active ignoring) can decrease inappropriate behaviour.

Managing hyperactive learners who might be working independently should involve novelty and task stimulation according to two of the respondents. It is reported that ADHD children display fewer behavioural problems in novel or unfamiliar surroundings or when tasks are unusually novel but increase their level of deviant behaviour as familiarity with the setting increases. Barkley (1998) maintains that it would not be unexpected to find that ADHD children are rated as far better in their behaviour at the beginning of the academic year when they are presented with new teachers, classmates, classrooms, and even school facilities.

The degree of stimulation in the task also seems to be a factor in the performance of ADHD children. According to Zentall (1993), research suggests that colourful or highly stimulating educational materials are likely to improve the attention of these children as compared to relatively low stimulation or uncoloured materials. Interestingly, such differences may not affect the attention of normal children as much or may even worsen it (Barkley, 1998).

When ADHD learners are exposed to situations that have low levels of stimulation they are likely to exhibit increases in hyperactive behaviour and disruption of on-task performance. Many academic tasks may become

repetitive and tedious for learners with ADHD. One method for increasing motivation to focus on academic work is for rewards to be new and interesting (Anhalt et al.,1998). Research has generally indicated that to improve sustained attention performance for learners with ADHD, colour novelty improves performance, novel settings of tests, films, and games improve behaviour, music novelty improves maths productivity and psycho-stimulant medication produces reliable gains in maths facts and in handwriting performance (Zentall, 1993).

Hyperactive learners working in a group, according to 10% of the respondents, should involve a fair amount of organisation and strategic planning. Anticipation is the key with ADHD children. This means that educators must be more mindful of planning ahead in managing ADHD children, particularly during phases of transition across activities or classes, to ensure that the learners are cognisant of the shift in rules (and consequences) that are about to occur. Becoming organised is an arduous task for many learners with ADHD. Often their desks resemble a disaster area (Yehle, 1998).

One educator indicated that she uses time-out or other forms of punishment as an intervention to manage a disruptive hyperactive learner working in a group. Barkley (1998) points out that punishment should be used sparingly. Educators who frequently use punishment to the exclusion of positive consequences may be less effective in managing children's behaviour

because of a loss in their reinforcing value because of the child's having adapted to the punishment. Excessive criticism or other forms of punishment may also cause the classroom situation to become aversive. As a result, the child may begin to avoid certain academic subjects by skipping classes or to avoid school in general by becoming truant. Frequent, harsh punishment may even accelerate a child's overt defiance, especially when a teacher inadvertently serves as an aggressive model.

Two studies have been reported in which the primary intervention was the withdrawal of positive reinforcement. Sachs (1973) effectively reduced the hyperactive classroom behaviours of a child by placing him in a time-out room for five minutes contingent upon the hyperactive responses. Attending behaviour in the classroom increased when hyperactivity was reduced by time-out. In contrast to Sach's positive findings, Risley (1968) instructed a mother to implement a 10 minute time-out with her autistic child contingent on each instance of hyperactive climbing behaviour in the home. No reduction in the target behaviour occurred over 63 days of treatment (Brundage-Aguar, Forehand & Ciminero, 1976).

Barkley (1998) suggests that praise appears to be most effective when it specifies the appropriate behaviour being reinforced and when it is delivered in a genuine fashion - with a warm tone and varied content appropriate to the developmental level of the child. He continues to state that praise is also more effective when it is delivered as soon as possible following the desired

behaviour, such as getting started on work, raising a hand to talk and working quietly.

Due to their decreased sensitivity to reward and their failure to sustain effort when reinforcement is inconsistent and weak, ADHD learners usually require more frequent and more powerful reinforcement, often in the form of special privileges or activities, to modify classroom behaviour. Many of the respondents in the sample suggested that special privileges or activities may be provided based on certain goals, for example, a learner may earn extra free time for completing assigned class work promptly and accurately. In other cases, a token economy may be used. In this system, learners earn tokens (points, stars etc.) throughout the day and then later exchange their earnings for "backup" rewards (privileges, activities). Backup rewards are typically assigned a purchase value so that rewards can be matched to the number of tokens or points earned. The identification of powerful rewards and backup consequences is critical for program success (Barkley, 1998).

An intervention that allows a child many opportunities during the day to obtain rewards increases the likelihood that the child will exhibit compliant and appropriate behaviours in the future. In contrast, a reward program that involves lengthy delays between the expected behaviour and the reinforcer is likely to be a poor motivator for learners with ADHD (Anhalt et al., 1998). The success of token programs in numerous studies and their utility with a wide range of problem behaviours have led to their widespread use in school

settings. Tokens are portable; thus they can be administered in any situation and can usually be distributed immediately following desirable behaviour. Token programs also tend to be very powerful because a wide range of backup rewards can be used to avoid satiation of any one reward. Forty-five percent of the educators involved in this study found that the learners responded to the charting of their positive on-task behaviour. It is important to point out that ADHD students typically lose interest if the same reward is used for too long and are much more effective if they are novel and change regularly (Barkley, 1998).

Jones (2000) claims that the ratio of reward to penalty in an ADHD child is about 8:1. This means that if a child is ignored or punished eight times for a particular behaviour but gets rewarded once, the behaviour will persist. Respondents mentioned that the use of positive approaches should be emphasised when working with ADHD learners but they found that negative consequences are also necessary. In fact, some studies show that brief reprimands may be more important than praise for maintaining appropriate behaviour. However, the effectiveness of negative consequences, particularly with ADHD learners, is highly dependent on several stylistic features. When educators use negative consequences, they should teach and reinforce children for alternative appropriate behaviours. This practice will aid in teaching appropriate skills as well as decreasing the potential for the occurrence of other problem behaviours (Barkley, 1998).

Reprimands and corrective statements are the most commonly used negative consequence utilised by the respondents. As in the case of praise, the effectiveness of reprimands is a function of how and when they are delivered. According to Barkley (1998), a number of studies indicate that reprimands that are immediate, unemotional, brief, and consistently backed up with time-out or a loss of a privilege for repeated non-compliance, are far superior to those that are delayed, long, or inconsistent. Eighty-seven percent of the educators used this intervention around or on the playground.

Proximity also seems to make a difference; reprimands that are issued in close proximity to the child have an edge over those yelled form across the room. Proximity control receive the support of 26% of the respondents in this study. In addition, learners responded better to educators who delivered consistently strong reprimands at the outset of the school year than educators who gradually increase the severity of their discipline over time. Finally, the practice of using encouragement in attempt to coax a learner into good behaviour is not as effective as clear, direct reprimands (Barkley, 1998).

Response cost involves the loss of a reinforcer contingent upon inappropriate behaviour. A few of the respondents in the sample commented on the use of response cost in their classrooms. The classic study of response cost conducted by Rapport, Murphy, and Bailey (1980) compared the effects of response cost with stimulant medication on the behaviour and academic performance of two hyperactive children. The response cost procedures

used resulted in increases in both on-task and academic performance, which compared favourably with the effects of stimulant medication. The immediacy with which the consequences could be delivered likely contributed to their efficacy.

Research shows that response cost has also been implemented in a group format. In one procedure, a self contained class was given 30 tokens (poker chips) each day . A token was removed contingent upon each occurrence of an interruption by any student. Tokens were counted at the end of the period; remaining tokens were exchanged for one minute of reading time by the teacher. Significant reduction in interruptions occurred and most of the students rated the program very favourably (Barkley, 1998). Seventy-one percent of the educators mentioned that group work was an intervention that they used in their particular classrooms. However, during one-to-one situations, ADHD children may appear less active, inattentive, and impulsive whereas in group situations, where there is little such attention, ADHD children may appear at their worst (Barkley, 1998).

Seventy-five percent of the educators advocated the use of time-out to manage their ADHD learners in their classrooms and 68% advocated the use of this intervention for around the school and on the playground. If a child is impulsive in the classroom, it is a sure bet he is impetuous on the playground, where there are fewer limits set to confine his behaviour. Rampant enthusiasm and reeling attention push the ADHD child into every aspect of

play without a thought of the effects of his actions. Unstructured transition times (e.g. breaks, changing classes, before and after school) can be difficult for ADHD children. Yehle (1998) suggests that some of the following strategies can be advocated during these times: provide a plan for unstructured times which indicates a clear purpose, foreshadow transition time in the classroom by reminding learners of the time limitations, arrange for the learner to have a responsible partner to follow during transition times.

Behavioural interventions may be statements of praise to learners who are on-task, redirections to those off-task or questions about the lesson with the intention of involving students in the learning process. Managing student behaviour in this manner better allows the teacher to issue consequences immediately, consistently, and frequently than if consequences are administered only after behaviour is out of control or for exceptional behaviour. Often teachers of ADHD spend a great deal of time attending to negative behaviour and teachers needs to alter their patterns of interaction to attending to positive behaviours (Barkley, 1998).

One hundred percent of the respondents in the sample acknowledged that medication helped the ADHD learner and 23% saw improved levels of concentration, 16% noted that the learner became more focused and 10 % noticed improved quality of work. Barkley's (1994) initial review of more than 120 studies up to 1977 indicated that between 73% and 77% of children treated with stimulants were seen as improved in their "behaviour". Stimulant

medication helps the ADHD child focus his attention and control his activity level. It also helps him regulate his behaviour so that it is less impulsive, disorganised, and chaotic (Ingersoll, 1998).

South African researcher, Benn, a psychiatrist who runs the Sandton ADDnova Clinic specialising in child and family development, states that Ritalin helps ADHD learners filter out background noise so they can concentrate. He recognises the fact that side-effects are broad ranging and that it is important to monitor kids on Ritalin. Bill Innes, headmaster of the Flamboyant School in Nelspruit, a school for children with learning problems, comments that some South African doctors think Ritalin is wonderful and there are others who are against its use (Fairall & Rogers, 2001).

Fifty percent of regular classroom teachers in the Kasten, Coury and Heron study (1992) were not aware of the physical and behavioural side-effects of stimulant medications. However, only 19% of the educators in this study replied that they were unaware of any side-effects that stimulant medications might present with. Documented short-term side-effects include tics, 'behavioural rebound', cognitive toxicity, iatrogenic effects on social behaviour and idiosyncratic side-effects.

Six percent of the educators identified tics as a side-effect of medication. Barkley (1998) estimated that fewer than 1% of children with ADHD who are treated with stimulants will develop a tic disorder and that in 13% of the

cases, the medication exacerbates pre-existing tics. The vast majority of such reactions usually subside once medication is discontinued. However, there are a few cases in the literature where tics apparently did not diminish in frequency and severity following termination of stimulant medication. Several recent studies suggest that the effects of stimulants on tics are less pronounced than was originally believed, resulting in minor increases in some motor tics and possible decreases in vocal tics. One educator identified the deterioration in behaviour that occurs in the late afternoon and evening following daytime administrations of stimulant medication viz. behavioural rebound. Johnston, Pelham, Hoza, and Sturgess (1998) conducted a rigorous study of this phenomenon in a sample of 21 children with ADHD treated with two doses of Ritalin and found that about one-third of their sample exhibited rebound effects. The magnitude of these reactions varied considerably across days for individual children.

None of the respondents mentioned cognitive toxicity but in discussion with a few of them, the researcher realised that they were aware of the effects of over and under dosing. High doses of stimulants conceivably may produce an over focusing or constriction of attention and, perhaps even a mental equivalent of motor stereotypes, such as perseverative responding or diminished flexibility in problem solving (Barkley, 1998).

Furthermore, research indicates that low and moderate doses of Ritalin do reduce the frequency of aggression and non-compliance in groups of children

with ADHD but have no appreciable effect, in either direction, on pro-social or non-social behaviour (Hinshaw, Buhrmester, & Heller,1989). Nevertheless, isolated cases may arise in which parents note that a child is no longer "spontaneous" or childlike in his behaviour and appears too controlled or socially aloof. In such cases, the dosage may need to be reduced or the medication discontinued. Each of the stimulants may produce unique side effects. A few children may develop skin rashes, stereotyped behaviour, increase choreiform movements and self-directed behaviour such as lip licking, lip biting, and light picking of the finger tips. Dose reduction seems to eliminate these behaviours. Some of these behaviours were identified by a few of the respondents in the sample.

According to experts in the field, all the stimulants can produce temporary symptoms of psychosis (e.g. thought disorganisation, press of speech and extreme anxiety) at very high doses, or even at smaller doses in a rare child. Rare cases of bone marrow suppression and neutropenia thrombocytopervia anaemia may also be associated with stimulant use, leading some physicians to screen all children for complete blood count during their initial drug trial.

Child psychologist, Baldwin, of the University of Teesside in England, describes Ritalin as toxic, addictive and capable of producing nerve cell damage which could affect memory and information processing as well as impairing learning. He states:

" Many children are now taking an explosive mix of sedatives and stimulants which will wreck their nervous systems. It's like driving a car downhill and having your foot on the accelerator and brake at the same time."

South African psychiatrist, Benn, claims that stimulants tend to induce normality rather than euphoria and that 75% to 80% of ADHD children respond well to the drug (Fairall & Rogers, 2001).

To conclude discussion on the short-term effects of stimulants, they are clearly dose related and subject to individual differences. In many cases, side-effects diminish within one to two weeks of beginning medication, and all, except possibly the occasional tic, disappear upon ceasing medication. It has been estimated that 1% to 3% of children with ADHD cannot tolerate any dose of stimulant medication and need to be treated with alternative medications (Barkley, 1995).

Long term side-effects is what parents fear most - that a medication used to treat today's problem will result in more serious problems in the future. A recent USA government report adds to the many findings that show medication improves the abilities of ADHD children to concentrate and progress through school, with findings that non-medicated ADHD learners are three times slower than their non-ADHD counterparts at making quick decisions. This slowness was not apparent in ADHD-diagnosed children who were being medicated with Ritalin, the study found. However, increasingly

vocal anti-medication lobbyists say the longer-term effects of Ritalin are not well enough known to allow the mandatory treatment of children with the drugs (The New Therapist, 2000).

Long-term side effects include the possibility of drug dependence and abuse, height and weight suppression, depression, insomnia and the manifestation of Tourettes syndrome. Several studies have sought to determine whether children treated with stimulants are more likely to abuse illicit substances as teenagers than are their ADHD counterparts who have not received stimulant treatment. The results suggest that there is no increased risk for drug abuse associated with treatment, although more research is needed to rule this out conclusively (Barkley, 1998).

Seventy-seven percent of the educators highlighted loss of appetite as a side-effect of medication. Studies show that any suppression in growth is typically minor, is a relatively transient side-effect of the first year or so of treatment and has no significant effect on eventual adult height or weight. Spencer, Biederman and Harding (1996) state that recent evidence indicates that children with ADHD may be somewhat smaller than their normal counterparts prior to puberty and catch up with their peers during adolescence, yet such growth delay is associated with the disorder and not with stimulant treatment. Ten percent of the respondents mentioned insomnia as being a side-effect. When the medication is wearing off, a rebound effect often occurs and as a result the child becomes so restless that he is unable

to fall asleep. If the medication contributes to sleep problems, it can be timed in such a way as to overcome this effect (Garber et al.,1990).

Serfontein (1990) reports that control studies were initiated to monitor if there were any side-effects of the medication. So far, there have been several long-term studies, the most notable being conducted at the Montreal Children's Hospital by Dr Weiss in which a group of children was treated with these drugs for five years in the late 1950s. At the end of their treatment period the medications were discontinued and the children reviewed on a five yearly basis. There were also two control groups: an untreated group and a group of children and a group of children who did not have Minimal Brain Dysfunction. The most recent report on these children is the 20-year follow-up study which has not reported any long-term side-effects in the treated group. The outcome of the three groups has been best in the children who did not have ADHD. The next best outcome was in the group with ADHD who received treatment with the drug therapy and the least successful outcome was in the untreated group.

Nineteen percent of the respondents listed a number of less frequently reported side-effects, including headaches, stomach aches, dizziness and other physical symptoms. Sixteen percent also listed emotional symptoms like moodiness, irritability and crying spells. In a recent survey of such side-effects, Dr Russell Barkley (1995) reported in the Clinical Child Psychology Newsletter of the American Psychological Association that ADHD children in

his sample had the same number of reported symptoms, which might also be labelled as side-effects, before and after they went on medication. For those learners who need and respond to medication, the dosage and timing of its administration are very important to the child's ability to concentrate and even in his classroom behaviour. The purpose of monitoring medication is to establish a child's optimal dosage. The majority of respondents in this study identified observation (77%) and record keeping (77%) as methods of monitoring the medication of ADHD learners in their particular classes.

Barkley (1998) recommends using two rating scales; one to assesses possible reductions in ADHD symptoms (e.g. ADHD Rating Scale-IV, Disruptive Behaviour Disorders Rating Scale) and the other measure taps changes in the situational pervasiveness of ADHD symptoms (i.e. School Situations Questionnaire). The vast majority need only be re-administered every several months. It is usually a good idea to review items from the Side-Effects Questionnaire each month. These questionnaires should be compared to previously collected data in an effort to specify which behaviours have actually worsened and to quantify the amount of behavioural change. In Sturgeon Bay, Wisconsin, a group of educators developed a method to monitor children with ADHD on medication. Two weeks after a student starts medication or 2 weeks after any change in medication or dosage, a follow - up report is completed. This report monitors the existence of typical side-effects of medication, as well as behavioural and academic problems. This follow-up is completely quarterly on all medicated students. Copies of the

report are shared with the child's physician and parents, as well as maintained in the school (Burcham, Carlson & Milich, 1993).

Six percent of the respondents stressed the need for a collaborative relationship with other professionals who form part of the team in managing ADHD learners. Establishing effective working relationships between school professional and community-based paediatricians is essential for successful ADHD programming in schools. Through ongoing collaboration, paediatricians can learn how school-based professionals can be helpful in assessing and treating ADHD; school professionals can obtain valuable medical and developmental perspectives and learn efficient methods of reporting treatment outcome. School psychologists are often hesitant to contact paediatricians, perhaps because they perceive paediatricians to be unavailable or disinterested in collaborating with school professionals. However, many of them welcome the input of school professionals because school-based consultants can provide them with the data needed to respond to parents' questions regarding the presence of ADHD and to make decisions about the effects and side-effects of medication (Power et al., 1994).

The American Academy of Paediatrics clearly encourages paediatricians to collaborate with teachers in the assessment and treatment of learners with learning and behavioural problems. Physicians depend on teacher input to evaluate and manage children with ADHD (Barbaresi & Olsen, 1998). The available data however, suggests that physician-teacher contact with respect

to ADHD-affected students is quite limited. Levy, Hay, McStephen, Wood and Waldman (1997) found in a survey of public schools, inadequate communication among educators, parents and physicians.

There is growing consensus that the provision of school-based services is essential in order to offer optimal care for children with ADHD (Power et al., 1994). Eighty-four percent of the respondents listed individual psychotherapy as an on-site support service for the ADHD learner. School psychologists are in a highly advantageous position to assess attention and behaviour problems, consult with educators regarding behaviour and educational strategies of intervention, evaluate intervention outcomes and serve as case managers in co-ordinating the care provided to learners with ADHD.

Therapeutic strategies for learners with ADHD in school environments often neglect the need to improve peer relationships. Approximately 50% to 60% of learners with ADHD experience some form of social rejection from their peers. Thus, in planning a comprehensive school treatment program, techniques to enhance the problematic learner's social status with his peer group should also be considered (Anhalt et al., 1998). Group sessions focusing on a variety of social skills are run by the psychologist at both these special schools. Although early manifestations of social skills training produced mixed results, more recent and systematic applications have yielded robust benefits (Pfiffner & McBurnett, 1997). Eighty-one percent of the respondents identified group psychotherapy as playing a role in

supporting ADHD learners.

Ninety-four percent of the educators listed speech and language therapy as an on-site support service offered to ADHD learners at these special schools. As ADHD children have an unusually high rate of speech and language disorders, this form of therapy is an integral part of managing this disorder.

Almost all of the educators (90%) included educator-parent communication as an important support service offered to the parents of the ADHD learner. This is consistent with the literature in that an important consideration for enhancing the effectiveness of school interventions is the relationship between home and school. When both educator and parents are knowledgeable about ADHD, have realistic goals, and are motivated to work with ADHD, effective collaborations develop easily. The need to establish interventions in all settings in which problems occur should be stressed to parents and school personnel as changes in one setting rarely generalise without intervention to other settings. Parents should be encouraged to be actively involved in the child's educational program, to follow through and to use positive reinforcement liberally with their child's teacher (Barkley, 1998).

An elementary school in Omaha, Nebraska, facilitated parental involvement through a behaviour management strategy that was designed to get the home and school working together to improve the students' behaviour. During a joint meeting, parents and educators agreed to target behaviours, set goals

and establish consequences. A case manager trained the teacher and family and provided follow-up consultation to ensure appropriate implementation. As a result, parents became involved in the children's school progress on a daily basis (Burcham et al., 1993).

Fifty-eight percent of the respondents replied that Parent Training (PT) was on offer at their special school whereas 29% said that their particular school did not offer PT. PT may be undertaken by the school psychologist or most educators have some insight into this area. PT is a short-term, problem-focused, educationally oriented form of treatment which is minimally intrusive. According to Jones (2000), such programmes aim to give parents the skills they need to manage their ADHD child, and have shown to improve child-management skills, enhance parental confidence and reduce stress in the family. PT has been demonstrated to be successful in improving compliance to rules and reducing parent-child conflict (Power et al., 1994). Tremblay (1995) found that early, extensive parent training with 'pro-social skills' training for young disruptive children can reduce future behavioural problems. Furthermore, various studies show that improvements in parenting skills are accompanied by a reduction in inattention, overactivity, non-compliance, aggression, and general management problems (Barkley, 1998).

Another advantage to using PT is that it can be used to target not only the child's primary ADHD symptomatology but also many of the co-morbid features, including oppositional-defiant behaviour and conduct problems.

Moreover, because PT interventions often utilise parents as co-therapists, many parents themselves derive indirect therapeutic benefits from their involvement in treatment. Although it remains to be seen what the long-term impact of PT interventions might be, preliminary evidence seems to suggest that treatment-induced improvements in psychosocial functioning can be maintained in the absence of ongoing therapist contact, at least in the short-term (Barkley, 1998).

Sixty-one percent or 19 respondents out of a total of 31, listed parent support groups as an on-site parent support service offered at their school. It is recognised that all support groups share a common goal - that of helping the members deal with a problem they have. Through continuing education, but especially by sharing information and successes, members learn new ways to cope with the problems that concern them (Garber et al., 1990). Besides disseminating information regarding ADHD, these groups are potentially helpful in preventing social isolation among parents and maintaining treatment gains from behavioural family interventions (Power et al., 1994).

In response to a concluding question as to whether participants of this study felt that they would benefit from attending a workshop on the management of learners diagnosed with ADHD, 97% responded positively. This figure indicates the dire need for a deeper insight into various aspects of this disorder. Griessel et al., (1995) comment that not only should an educator enhance her academic standard through formal study but by attending

in-service training programmes and refresher courses. As Samuel Smiles, as quoted by Barkley (1990, p169) once said,

"Human knowledge is but an accumulation of small facts....the little bits of knowledge and experience carefully treasured up and growing at length into a mighty pyramid."

This search for promising practices may provide some bit of knowledge that will one day complement the larger service delivery system for learners with ADHD (Burcham et al., 1993).

In sum, these two special schools in this study appear to be havens for learners diagnosed with ADHD with their well informed educators, small classes and on-site support services offered to both the learner and his parents. However, the quest for a deeper understanding into this disorder and the desire for a greater insight into the management of these learners diagnosed with ADHD needs to be addressed. Chapter Five provided the context for the discussion of results. The next chapter will summarise the findings, implications and limitations of the study and give direction for future study.

CHAPTER SIX

FINDINGS, LIMITATIONS AND CONCLUSION

This study was both a survey and a qualitative analysis of information which together, provided the answers to critical questions. The quantitative analysis of the survey and the qualitative analysis of the open-ended questions in the questionnaire, provided information on the management of learners diagnosed with ADHD in special schools. The biographical information was compiled from the profiles of the thirty-one educators who participated in this study. Reference has been made to the purpose of the study and the critical questions throughout the report. In this chapter, a general summary of the findings, limitations of the study and recommendations for further research are discussed.

The main purpose of this study investigated the management of learners diagnosed with ADHD in special schools. The theoretical framework employed was that of Teeter's Transactional Model (1998). In this model, the child/caregiver and child/environment interactions produce metabolic and neurochemical responses in the brain that are expressed in an individual's behaviour. When these interactions are favourable, positive patterns of cerebral activation are established. The critical questions that guided this research helped achieve the purpose of the study with some limitations.

6.1 CRITICAL QUESTIONS

6.1.1 Is the organisational structure of a special school an effective learning environment for learners diagnosed with ADHD?

The data from the questionnaire provided clear indicators and trends of the organisational structure in these two special schools, which accommodate learners with this disorder. The number of learners in a class was relatively small which according to the literature, allows for an optimum learning situation. Educators in this study were aware of the need to adjust the physical environment so as to avoid distractions for inattentive, impulsive and hyperactive learners. Most of the educators in the sample commented on the role that preferential seating in positioning of the ADHD learners in the classroom, played. Many of the respondents commented on the extra accommodations that they had made for these learners e.g. time-out corners, library corner, games nook. Educator's adapted their teaching styles and methods to suit the learning styles of the ADHD students. The environments of these schools were accepting and inclusive thus encouraging in most learners, the freedom to develop positive self-esteem. With this inner strength, ADHD learners were more likely to fulfil their potential and overcome their specific problems.

6.1.2 What interventions are administered in special schools to manage ADHD learners in the classroom and around the school?

A careful examination of the research results reveals interesting properties concerning the interventions administered to manage ADHD learners in special schools in the North Durban region. Educators showed an understanding of the ADHD learner's difficulties in terms of the management strategies they adopted. This may relate to the levels of experience of the respondents and the sources of information available. Classroom interventions were predominantly of a behavioural nature with positive consequences outweighing negative consequences. The researcher was not aware of any of the ADHD learners following Individualised Education Programmes, which according to Chambers (2001), every learner with special educational needs should have. More negative consequences were the preferred method of intervention for managing ADHD learners around the school and on the playground. This may be explained by the necessity for immediate intervention. On-site interventions in the form of speech and language therapy, occupational therapy, and remedial lessons for ADHD learners formed an integral part of their school day. Both schools have on-site educational psychologists, which is advantageous in the case of crises intervention, running social skills and self-esteem groups and individual psychotherapy. The psychologists also play a role in parent intervention, intellectual and emotional assessments and run life-skills programmes for the learners. It is pertinent to comment at this stage, that few mainstream

schools have these support services on offer. Parents of learners diagnosed with ADHD are offered a range of support services, some on-site and others in the form of school-home communication. As mentioned previously, parents are given support, advice and made aware of the needs of their ADHD children.

6.2 IMPLICATIONS

The results of this study have clear implications for the designers and administrators of teacher training courses. A systematic and comprehensive training program specific to ADHD learners, which includes an overview of this disorder, school-based assessment, and intervention strategies, should be constructed. According to researchers, appropriate training courses should include consideration of many factors affecting a teacher's ability to deal with problematic events, such as perceptions of behaviour difficulties and diagnostic skills. Respondents in this study also would benefit from receiving more insight into the side-effects of medication and the important role that monitoring of the learner taking medication, plays. Although educators today are generally much better informed about the needs of ADHD learners and how to meet these needs in the classroom, the desire for further insight into this disorder in a school setting was expressed by the respondents in this study.

Picton (1997), comments that South Africa does not, in fact, have schools for ADHD learners. He states that referring a hyperactive child to a school for learners with special educational needs will rarely lighten the child's burden. He continues to say that these learners are even more out of place in these schools and that their self-image suffers a further setback. They should be accommodated in schools where they are stimulated and allowed to flourish in optimum circumstances. This has implications for curriculum designers and educators. The hyperactive child needs a captivating environment, positive feedback and creative support in the same way that an epileptic needs good tuition and medical care; the cerebrally handicapped person deserves optimum circumstances for actualising his potential; the cognitively handicapped person needs to be trained in a milieu where he will find a place in society. An obligation exists to accommodate ADHD learners and by so doing, they will plough their innovative ideas and energy back into the community, bringing about progress and change in our world.

Another implication, yet highly improbable when seen in the South African context, is for architects of schools to consider these learners with special needs when designing classrooms. Ideally, they should be situated away from anything which could distract these learners i.e. playgrounds, road frontages, swimming pools. Time-out rooms adjacent to classrooms could be put to effective use. Walls should not be painted too brightly and classrooms should be wider than deeper so that each learner is closer to the front of the class and the educators can have easier access to everyone. Doors could be

placed at the back of the rooms in order to reduce distractions to a minimum. In sum, the recommendations made in this chapter should be seen as being pertinent to the management of learners diagnosed with ADHD.

6.3 LIMITATIONS

This study has several limitations. Firstly, as a novice researcher, whilst the questionnaire was refined a number of times, it still contains superfluous items and for further use, requires further modification. Secondly, the sample size was small and consisted of only two special schools in the North Durban region. These schools were selected for a number of reasons including the high percentage of ADHD learners in each school. It must also be considered that one of the participating schools was for short-term placement whereas the other was for long-term placement. This could have compromised the generalisability of the results. The population of the learners attending these special schools was not a true reflection of the population at most mainstream schools as the two special schools appear to have a predominantly higher white learner ratio. This could also effect the generalisability of the results. Furthermore, these special schools were sited as they have a significant number of learners diagnosed with ADHD. This research shows that there are on average nine ADHD learners in an average size class of 14 learners. Therefore, care must be taken with regard to generalisability of results considering this limitation of research bias.

In addition, the researcher had no control over the respondents' completion of the questionnaire. As the questionnaires were distributed to educators and collected after a seven to ten day time period, it is possible that educators could have collaborated with each other or referred to other sources so as to present themselves in a more favourable light, that is, more knowledgeable and informed about ADHD. Thus, their responses may not be a true reflection of their knowledge base concerning ADHD.

A further limitation was the failure to address the educators with regard to the purpose of the research, the need for accuracy of answers and also to attend to any further queries. On examination, a number of questionnaires appeared to be incomplete. Furthermore, the researcher did not have a sound understanding of a number of abbreviations some of the educators used to describe academic and professional qualifications.

6.4 DIRECTION FOR FUTURE RESEARCH

An important outcome of any study undertaken is to provide an impetus for future research. In considering the process and findings of the study, the writer has identified several issues that warrant further research.

Identification of the gene or genes associated with ADHD would aid enormously in diagnosis (Ingersoll, 1998). Such a genetic marker would also help identify at-risk children at a very early age so that preventative programs

could be put in place in place. Dr Barkley, who is conducting an early-intervention program with kindergarten children who are at high risk for ADHD at the University of Massachusetts Medical Centre, is optimistic that programs such as his will reduce the educational and social risks these children face and improve the outcome for all youngsters with ADHD. Furthermore, when greater diagnostic precision is achieved, concerned parties can look forward to treatment plans tailored to meet the needs of each individual as well as the interventions which would be the most beneficial to each ADHD learner.

Literally thousands of studies, spanning the fields of medicine, psychology, and education, have appeared on this topic. The data-base is so voluminous that in America, federally funded national information clearing houses have been created to aid in assessing extant information. However, little is known about ADHD in the school setting or if there are differences between learners being served in either special or mainstream education settings (Burcham et al., 1993). Kaufman, Kameenui, Birman, and Danielson (1990) indicated that more research should be moved from the laboratory into the schools to find solutions to the problems that face education today. Tharp and Gallimore (1988) echoed this concern, suggesting that many researchers focused on matters far removed from the classroom. This is an area which, undoubtedly, warrants further investigation.

Education is the only area of our lives where, in order to succeed, we must be good at everything. Special skills and talents are rarely taken into

consideration when curricula are designed. There is little room for specialisation and individualism in the fast pace of daily routine. Therefore, long before many learners leave primary school, they have experienced repeated failure, frustration, and humiliation, and very little success (Boyles & Contadino, 1999). Continued research efforts to match specific instructional materials and behaviour management techniques to specific child characteristics and to improve maintenance and generalisation of intervention effects are clearly needed (Barkley, 1998).

Little research has been conducted on optimal, school-based instructional strategies for children with ADHD (Power et al., 1994). The need for computerised remedial programs needs to be explored. Likewise, exactly which accommodations and treatments are most needed and how they can most effectively be delivered remains to be researched (Reid, Maag, Vasa & Wright, 1994). Additional work is needed that examines individualised assessment of singular and combined interventions of varying intensity in treating school-related problems of ADHD learners. In a related manner, even within the behaviour therapy literature, there is not a clear-cut consensus as to what the most appropriate behaviour targets are for classroom settings. According to Power et al., (1994), research to date has focused primarily on the impact of interventions for ADHD on classroom functioning, as opposed to other school settings, such as the playground, outside the tuckshop etc. This is an also an area which requires further investigation.

Two aspects regarding the management of learners diagnosed with ADHD that have not received much attention from the literature, are inclusion and peer interventions. The field of education in South Africa is moving towards inclusion of learners with special needs into mainstream classes. However, according to Anhalt et al., (1998) educators often do not have the tools or skills to meet these special needs. A very real need exists to provide mainstream educators with both knowledge of ADHD and a repertoire of techniques to deal with the problems learners with ADHD may experience in the mainstream classroom environment (Reid et al.,1994).

Both ADHD as a disorder and the instruments designed to assess it were derived from the perspective of Western professionals, using Western concepts of disorder and measurement and without regard to cultural differences. There is a need to assess the confidence that we have when assessing cultural minorities for ADHD. For example, when using behavioural rating scales in the case where the rater and ratee come from different cultural backgrounds. An investigation of the use of behaviour rating scales across cultures is needed (Reid, 1995).

Since ADHD is presenting more as a societal circumstance, cultural interventions are indicated, not medical solutions. Therapists need to become cultural critics and community activists. This means interfacing with educators, parents and other community agencies. Research into this area would be very beneficial to South African learners diagnosed with ADHD.

Burcham et al., (1993) reports that evaluations and interventions with students with ADHD from diverse cultures should address potential bias in assessment procedures, tease out language issues that may be contributing to inattention and develop interventions that are sensitive to the child's background.

Another area for further research is the benefit of ADHD learners having a full-time aide to monitor and support them in the school environment. The reality of this intervention receiving further attention in South Africa is highly unlikely because educational resources are already cash-strapped. More in-service training programs accessing information about the management of learners diagnosed with ADHD should be provided and consultation models for servicing ADHD learners should be developed which involve collaboration between school psychologists, related school personnel, general and special education educators, and parents.

It appears that there is a need for further research to address the following issues with regard to Parent Training (PT).

- With which treatments might PT be combined to maximise therapeutic outcome?

- For which children and their families is the combination of PT with other treatments a viable intervention approach?

Furthermore, schools may wish to increase their outreach to provide PT and work more actively to involve parents in interventions that are co-ordinated across school and home settings.

Advances in the area of psychopharmacology are inevitable, where new medicines which are targeted more precisely at specific symptoms patterns are also less likely to produce unwanted side-effects.

6.5 CONCLUDING THOUGHTS

The questions raised in this research in no way exhaust the possible issues surrounding ADHD. As stated above, future research needs to look at other foci. ADHD has undoubtedly become a mature disorder and field of scientific study, widely accepted throughout the mental health and paediatric profession as a legitimate developmental disability. In the past decade alone, there have been so many advances in our knowledge about ADHD that optimism about how children with ADHD will fare in the years ahead, is indicated. However, in many ways, our understanding of the ADHD pathology is still in its first chapter. The next few decades promise to be more exciting as our ability to test, measure, and evaluate the biological processes implicated in neurobiologic disorders expands. Hallowell and Ratey (1995) point out that it is doubtful that the magic bullet that can rid an individual of ADHD will be found. They stress that one day our methods of treatment might be sophisticated enough so that the frustrations and

uncertainties of living with the syndrome will be eased, and those with ADHD can draw confidently on their thoughts.

At the close of the 20th century it was unmistakably one of the most well-studied childhood disorders and the object of renewed research initiatives into its adult counterparts. This should eventually lead to as widespread an acceptance of adult ADHD as has occurred for the childhood version of this disorder. Further discoveries into its nature, causes, and developmental course promise tremendous advances in insight not only into this disorder but also into the very nature and development of human self-regulation more generally and its rather substantial neurological, genetic, and unique environmental underpinnings (Barkley, 1998).

Many of the problems that plague the ADHD child during the elementary school years stem from the types of experiences in which he must participate. Recognising this fact, there are many interventions that can help the ADHD learner adjust to life in the classroom (Garber et al., 1990). It goes without saying that the more informed educators are about a variety of interventions, the more success the ADHD learner will experience in the school environment. Fundamentally, however, to his continuing success will be the ability of the school and home to co-ordinate efforts and to address this question "How can we work together to promote a successful educational experience for this child?" It is an ongoing process, but one where you can very definitely see a payoff in the learner's attitude, his academic

performance and the reactions to his peers and educators. Eventually the learner's school career will come to a conclusion. Although one's education is never over, the ADHD learner will no longer have to sit in a classroom unless he so chooses. Given the skills he has learned, he will be able to set his pace and follow his own interests. He will be ready to head into what is fondly referred to as the real world (Garber et al., 1990).

Knowledge of ADHD can transform an educators work with difficult learners. It can help one to re-frame problems and to take a different and more effective approach when dealing with ADHD aspects of behaviour and learning. It is therefore essential for the educator to know as much as one can about ADHD. Research into human behaviour will never end, and new theories related to the management of ADHD continue to evolve (Train, 1996). Griessel et al., (1995) supports Trains (1996) views by saying that educators today live in an era when the knowledge which sufficed yesterday may no longer be adequate tomorrow. According to researchers in this field, proactive educators should study the research to gain insight into the causes, symptoms and manifestations of ADHD. They will form attitudes and opinions, making conscious decisions regarding their demeanour, approach and classroom environment (Hogan,1997). Effectively dealing with ADHD learners is a continual learning process for educators as they use a combination of classroom interventions tailored to the needs of the individual learner (Yehle,1998). These children need continuous personal encouragement and care. Creative opportunities are important to the

children in order to develop social skills. They must be involved in an academic program where they can experience success. Buchoff (1990) notes that insightful educators, who work with ADHD children during their formative foundation school years, help these children acquire the positive attitudes and skills that last them a lifetime. Finally, Train (1996) comments that to be successful with these learners it is important for the educator to create their own conceptual model. This can be most effective if it is a mature blend of personal experience and recent findings.

Ingersoll (1998) reports that new ground is broken daily and our knowledge about ADHD grows at an exponential rate. An increasing body of research on children's ability to cope with adversity finds that positive teacher-learner relationships are essential. As a society we must understand and deal effectively with the alarming trend of problems among our youth. For professionals working with ADHD learners, this future exponential trend offers great hope. In the end, no matter how effective and efficient our treatments are for ADHD, it is the course of society and the outcome for all children that will best predict and contribute to success in the treatment of ADHD. It is imperative that a diagnosis of ADHD be taken seriously. It is no longer good enough for parents, psychologists, educators and paediatricians to pretend it is a trivial non-condition. Whatever means are used, the aim should be to help these learners enter adulthood with the best education, esteem, and life-skills that are possible (Green & Chee, 1995).

As J. Allen Boone in his poem "Kinship with all life", from A Guide for the Advanced Soul - A Book of Insight wrote :

"The most effective way to achieve right relations

with any living thing

is to look for the best in it,

and then help that best into the fullest expression."

knowledge

REFERENCES

Abramowitz, A.J. & O'Leary, S.G. (1991). Behavioural interventions for the classroom: Implications for students with ADHD. School Psychology Review, *20* (2), 220 - 234.

American Psychiatric Association. (1994). Diagnostic and Statistical Manual of Mental Disorders . (4ed.). Washington DC : APA.

Anhalt, K., MCNeil,C. & Bahl, A. (1998). The ADHD Classroom Kit : A Whole Classroom Approach for Managing Disruptive Behaviour. Psychology in the Schools, *35* (1), 67 - 79.

August, G. & Garfinkel, B. (1989). Behavioural and cognitive subtypes of ADHD. Journal of the American Academy of child and Adolescent Psychiatry, *28*, 739 - 748.

Barbaresi,W. & Olsen, R. (1998). An ADHD educational intervention for elementary school-teachers: A pilot study. Journal of Developmental and Behavioural 19 (2), 94 - 100.

Barkley, R.A. (1994). Choosing a teacher for your child with ADHD. ADHD Report, *2* (40), 1 - 3.

Barkley, R.A. (1995). Taking Charge of ADHD. New York: Guildford Press.

Barkley, R.A. (1998). Attention Deficit Hyperactivity Disorder: A Handbook for Diagnosis and Treatment. New York: Guildford Press.

Benn,D., Benn, J., Venter, A. & Aucamp, A. (1998). Attention Deficit Hyperactivity Disorder. Novartis: South Africa (Pty) Ltd.

Boyles, N. & Contadino, D. (1999). Parenting a child with ADHD. Chicago: NTC/Contemporary Publishing Group, Inc.

Breggin, P. (1996, 20 May). Whose Attention Disorder Does Ritalin Treat? The New York Times.

Brown, R., Wynne, M. & Medinis, R. (1985). Methylphenidate and cognitive therapy: A comparison of treatment approaches with hyperactive boys. Journal of Abnormal Child Psychology, *13,* 69 - 88.

Brundage-Aguar, D., Forehand,R, & Ciminero, A. (1976). A review of treatment approaches for hyperactive behaviour. Journal of Clinical Child Psychology, *6,* 3-10.

Bryson, J. (1998). Effective Classroom Management. London: Hodder & Stoughton.

Buchoff, R. (1990). Attention Deficit Disorder: Help for the Classroom Teacher. Journal of Childhood Education, *67* (2), 86-90.

Burcham, B., Carlson, L. & Milich, R. (1993). Promising School-Based Practices for Students with Attention Deficit Disorder. Council for Exceptional Children, *60*, 174- 180.

Busch, B. (1993). Attention deficits: Current concepts, controversies, management, and approaches to classroom instruction. Annals of Dyslexia, *42*, 5-25.

Chambers, B. (2001). A Sense of Belonging : Should I mainstream my child. Cape Town: New Africa Books.

Comfort, R.L. (1992). Teaching the Unconventional Child. Colorado: Teacher Ideas Press.

Diller, L.H. (1998). Running on Ritalin. New York: Bantam Books.

Engelbrecht, P. (1993). A South African Perspective on Cognitive Control Therapy for Learning - disabled Children. School Psychology International. 14, 111 - 117.

Fairall, S., & Rogers, P. (2001, 9 August) Wonder cure for 'wild' kids - new Ritalin row. You magazine, 14 - 15.

Farrell, P. (1995). Children with Emotional and Behavioural Difficulties. London: The Falmer Press.

Feuerstein, R., Rand, Y., Hoffman, M. & Miller, R. (1980). Instructional Enrichment. Baltimore: University Park Press.

Garber, S., Garber,M. & Freedman, R. (1990). Helping the ADD / Hyperactive Child. A practical program for changing your child's behaviour with and without medication. New York: Villard Books.

Goodlad, J. & Lovitt, T. (1993). Integrating General and Special Education. New York: Macmillian Publishing Company.

Gray,J. (1982). The neuropsychology of anxiety. New York: Oxford Press.

Green, C. & Chee, K. (1995). Understanding ADHD: A Parent's guide to Attention Deficit Hyperactivity Disorder in Children. London: Vermilion.

Griessel, G., Louw, G. & Swart, C. (1995). Principles of Educative Teaching. South Africa: Acacia Books.

Hallowell, E. & Ratey, J. (1995). Driven to Distraction. New York: Simon & Schuster.

Hindshaw,S., Buhrmester,D. & Heller,T. (1989). Anger control in response to verbal provocation: Effects of stimulant medication for boys with ADHD. Journal of Abnormal Child Psychology, 17, 393-407.

Hinshaw, S.P. (1999). Moderators and Mediators of treatment response for children with Attention Deficit Hyperactivity Disorder. Archives of General Psychiatry, 56, 1088 - 1096.

Hogan, D. (1997). ADHD: A Travel Guide to Success. Journal of Childhood Education, 73 (3), 158-160.

Ingersoll, B.D. (1998). Daredevils and Daydreamers: New Perspectives on Attention-Deficit Hyperactivity Disorder. New York: Main Street Books.

Johnston,C., Pelham,W., Hoza,J. & Sturges,J. (1988). Psychostimulant rebound in attention deficit disordered boys. Journal of the American Academy of Child and Adolescent Psychiatry, 27, 806 - 810.

Jones, M. (2000). Hyperactivity - What's the alternative? Boston: Element Books.

Jones, N. & Sayer. J. (1988). Management and the Psychology of Schooling. London: Falmer Press.

Kaplan, H. & Sadock, B. (1995). Comprehensive textbook of Psychiatry. (6ed.). Baltimore: Williams & Williams.

Kasten,E., Coury,D. & Heron,T. (1992). Educators' knowledge and attitudes regarding stimulants in the treatment of attention deficit hyperactivity disorder. Developmental and Behavioural Paediatrics, 13, 215 - 219.

Kaufman, J., Kameenui, E., Birman, B. & Danielson, L. (1990). Special education and the process of change: Victim or master of educational reform? Exceptional Children, 27, 109 - 115.

Klopper, J. (2000). ADD/ADHD; Prevalence and nature of this disability affecting learning and behaviour. Paper presented at ADHD symposium, Kenmont School, Durban.

Levine, B. (2000). Medicating children with Attentional Deficit Hyperactivity Disability. Paper presented at ADHD symposium, Kenmont School, Durban.

Levy, F., Hay, D.A., McStephen,M., Wood,C. & Waldman,I. (1997). Attention deficit hyper-activity disorder: A category or a continuum? Genetic analysis of a large- scale twin study. Journal of the American Academy of Child and Adolescent Psychiatry, 36, 737 - 744.

McNamara, B. & McNamara, F. (2000). Keys to parenting a child with Attention Deficit Disorders. New York: Barrons.

McCain, A. & Kelly, M. (1993). Managing the classroom behaviour of an ADHD preschooler: The efficacy of a school - home note intervention. Child and Family Behaviour Therapy, 15, 22 - 24.

Mda, T. & Mothata, S. (2000). Critical Issues in South African Education After 1994. South Africa. Jutas.

Miller, J. (1998). The Childhood Depression Sourcebook. Illinois: Lowell House.

Naicker, S. (1999). The Politics of Specialised Education and Mainstreaming. Paper presented at the University of the Western Cape.

Niblett, W. (1954). Education and the modern mind. London : Faber.

O'Brien, T. (1998). Promoting Positive Behaviour. London: David Fulton.

Pfiffner,L. & Barkley,R. (1998). Treatment of ADHD in school settings. In R. Barkley, Attention-deficit hyperactivity disorder: A handbook for diagnosis and treatment. New York: Guilford Press.

Pfiffner,L. & McBurnett,K. (1997). Social skills training with parent generalization: Treatment effects for children with attention deficit disorder. Journal of Consulting and Clinical Psychology, *65*, 749-757.

Picton, H. (1997). Hyperactive Children: Caring and Coping. Johannesburg: Witwatersrand University Press.

Power,T., Atkins,M.,Osborne,M. & Blum, N. (1994). The School Psychologist as Manager of programming for ADHD. School Psychology Review, *23*(2), 279-291.

Quay,H. (1997). Inhibition and attention deficit hyperactivity disorder. Journal of Abnormal Psychology, 25, 7 - 14.

Ranney, C. (2000). Interventions for ADHD : Treatment in Developmental Context: Education and Treatment of Children, *23*(1), 100 - 104.

Rapport,M., Murphy,A. & Bailey,J. (1980). The effects of a response cost treatment tactic on hyperactive children. Journal of School Psychology, 18, 98 - 111.

Reeve, R. (1994). The Academic impact of ADHD. Attention magazine. *1* (1), 8 - 12.

Reid, R., Maag, J., Vasa, S. & Wright, G. (1994). Who are the children with Attention Deficit - Hyperactivity Disorder? A school-based survey. The Journal Of Special Education, *28* (2), 117 - 137.

Reid, R. (1995). Assessment of ADHD with culturally different groups : The use of behavioural rating scales. School Psychology Review, *24* (4), 537 - 560.

Rief, S. (1993). How to reach and teach ADD/ADHD children. USA: The Centre for Applied Research in Education.

Rosner, J. (1993). Helping Children Overcome Learning Difficulties. New York: Walker and Company.

Serfontein, G. (1990). The Hidden Handicap. London: Simon & Schuster.

Sergeant,J. & van der Meere,J. (1988). What happens when the hyperactive child commits an error? Psychiatry Research, 24, 157 - 164.

Spencer,T., Biederman, J. & Harding, M. (1996). Growth deficits in ADHD children revisited: Evidence of disorder-associated growth delay? Journal of the American Academy of Child and Adolescent Psychiatry, 35, 1460 - 1469.

Strydom, J. & du Plessis, S. (2001). The Myth of ADHD and Other Learning Disabilities. Louisiana: Huntington House Publishers.

Teeter, P.A. (1998). Interventions for ADHD: Treatment in developmental context. New York: Guilford Press.

Tharp, R. & Gallimore, R. (1988). Rousing minds to life. Cambridge : University Pre

The New Therapist 10, November / December. South Africa.

Thomas, J. (1991). You're the greatest! Principal magazine, *71* (1), 32 - 33.

Train, A. (1996). How to deal with Very Difficult Children. London: Souvenir Press.

Tremblay, R. (1995). Attention magazine, *6* (2), 21.

Wallis, C. (1994, July). Life in Overdrive. Time magazine.

Yehle, A. (1998). An ADHD Success Story: Strategies for Teachers and Students Teaching Exceptional Children, *30*, 8-13.

Zentall, S. (1993). Research on the Educational Implications of Attention Deficit Hyperactivity Disorder. Council for Exceptional Children, *60* (2), 143 - 153.

6 Brackenhurst
310 Vause Road
Berea
DURBAN
4001

The Regional Co-ordinator : Research
Department of Education and Culture
Private Bag X54323
DURBAN
4000

5 December 2000

Dear Sir

PERMISSION TO CONDUCT RESEARCH : NORTH DURBAN AREA

I wish to conduct research in the special schools in the North Durban area, utilising class educators. The research is part requirement of an M.Ed (Ed. Psychology) degree. My thesis focuses on the management of learners diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) in special schools.

This study will focus on the class educators management of learners diagnosed with ADHD. This study will examine whether the organisational structure of a special school is an effective learning environment for ADHD learners and will also investigate the interventions administered to manage these learners in these special schools. Please find a copy of my research proposal for further scrutiny.

Yours sincerely

Felicity Tonkinson
University Of Durban-Westville
Student Number : 200000236

APPENDIX II

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

DEPARTMENT OF EDUCATION AND CULTURE
UMNYANGO WEMFUNDO NAMASIKO
DEPARTEMENT VAN ONDERWYS EN KULTUUR

NORTH DURBAN REGION | ISIFUNDAZWE SENYAKATHO NETHEKU | NOORD DURBAN STREEK

Address:	Truro House	Private Bag:	Private Bag X54323	Telephone:	(031) 360-6911
Ikheli:	17 Victoria Embankment	Isikhwama Seposi:	Durban	Ucingo:	
Adres:	Esplanade	Privaatsak:	4000	Telefoon:	
				Fax:	(031) 332-1126
Enquiries:	Dr D W M Edley	Reference:	2/12/2/3	Date:	11 December 2000
Imibuzo:	360-6247	Inkomba:		Usuku:	
Navrae:		Verwysing:		Datum:	

Ms F Tonkinson
6 Brackenhurst
310 Vause Road
Berea
DURBAN
4001

Dear Ms Tonkinson,

PERMISSION TO CONDUCT RESEARCH : NORTH DURBAN REGION

1. Your letter on the above matter dated 05 December 2000, received today, refers.

2. You are hereby granted permission to conduct research along the lines of your proposal, subject to the following conditions:

   a. No school/person may be forced to participate in your study;
   b. Access to the schools you wish to utilise is negotiated with the principals concerned by yourself;
   c. The District Manager must be informed of the details of these schools;
   d. The normal teaching and learning programme of the school is not to be disrupted;
   e. The confidentiality of the participants is respected; and
   f. A copy of your findings should be lodged with the Regional Chief Director on completion of your studies.

3. This letter may be used to gain access to schools.

4. May I take this opportunity to wish you every success in your research.

Yours faithfully,

Dr D W M Edley
Regional Co-ordinator: Research

Prof. AJ Lasich

Specialist Psychiatrist
(M.B.ChB., D.P.M., F.C.Psych. (S.A.)

P.O. Box 50166
Musgrave Road
4062

Medical Mews 4
Parklands Hospital
Overport, Durban
Tel: (031)2074644/5

6 July 2001

Ms F. Tonkinson
6 Brackenhurst
310 Vause Road
Durban 4001

Dear Ms Tonkinson

I have studied the questionnaire which you intend using in your study of learners in special schools who have been diagnosed as having ADHD. In respect of the sections covering biographical data, organisational structure and interventions, I feel that the questionnaire provides information pertinent to management and allows for a critical evaluation of the participant's understanding of treatment modalities as well as the condition itself and the impact that it has on learners, educationists and family. In my opinion it serves the purpose of your study.

Yours sincerely,

AJ Lasich

AJ LASICH

This questionnaire is to be completed by Educators in Special Schools. Information disclosed this questionnaire is treated with strict confidentiality and will be used to understand management of learners diagnosed with Attention Deficit Hyperactivity Disorder in Spe Schools.

Unless otherwise indicated, please tick ✓ appropriate ☐ where applicable.

Contact details: (Voluntary)

Tel code: _____ Tel No: _____ Cell No: _____

E-mail address: _____

Thank you for your cooperation

Please consider whether:

- the questionnaire extracts the relevant information
- the physical layout follows a logical sequence, makes for easy reading
- did any terms confuse you, need further explanation
- where any questions ambiguous
- the questionnaire was tedious/manageable/toc long/ too short
- you have any suggestions to make re: tailoring of ?, adding of more significant questions etc.

EDUCATOR'S QUESTIONNAIRE

SECTION ONE BIOGRAPHICAL DATA

1. Educator's age: _____ yrs

2. Gender 1 ☐ Female 2 ☐ Male

3. Type of school: 1 ☐ Remedial 2 ☐ Special
3 ☐ Other (specify) _____

4. Qualifications:

• Academic Qualification(s)	Description (e.g. Bachelor of Arts)	Majors / Specialisation (e.g. Psychology, English)
1 ☐ Bachelors Degree		
2 ☐ Honours Degree		
3 ☐ Masters Degree		
4 ☐ Doctorate Degree		

• Professional Qualification(s)	Description - (e.g. Transvaal Teachers' Senior Primary Diploma)	Majors / Specialisation - (e.g. Geography & Physical Education)
1 ☐ 2 yr. Teacher's Diploma		
2 ☐ 3 yr. Teacher's Diploma		
3 ☐ 4 yr. Teacher's Diploma		
4 ☐ Post graduate Diploma		
5 ☐ Other (please specify)		

5. Indicate your response to the following questions by filling in the relevant numbers:

1 ☐ Total years of teaching experience

2 ☐ Years of teaching learners diagnosed with A.D.H.D.

3 ☐ Total number of learners in your class in 2001.

4 ☐ Total number of learners in your class diagnosed with A.D.H.D.

5 ☐ Number of learners with A.D.H.D. currently on medication

6. How have you acquired an understanding of A.D.H.D.? *(You may tick more than one block)*

1 ☐ Degree 3 ☐ Workshops 5 ☐ Internet

2 ☐ Diploma 4 ☐ Literature/Books 6 ☐ Other (specify) _____

7. Have you attended specific training in the management of learners diagnosed with A.D.H.D.?

1 ☐ No 2 ☐ Yes

8. List courses / Workshops you have attended for Learners diagnosed with A.D.H.D. in the past three years.

_____

_____

SECTION TWO ORGANISATIONAL STRUCTURE

- Educators' style:

1. How would you describe your teaching style?

   1 ☐ Authoritarian 2 ☐ Authoritative 3 ☐ Laissez - Faire

   4 ☐ Democratic 5 ☐ Other (specify) _____

2. How do you think your teaching style impacts on the A.D.H.D. learner? _____

3. What do you believe are the key elements in managing an inattentive learner? _____

4. How do you manage an impulsive learner? _____

5. How do you manage a hyperactive learner? _____

6. List skills / strategies that you use to manage learners NOT diagnosed with A.D.H.D.? _____

7. List skills / strategies that you use to manage learners diagnosed with A.D.H.D.? _____

- Physical environment:

1. Describe where your learners diagnosed with A.D.H.D. are seated in your classroom. _____

2. Why do you seat your A.D.H.D. learners in these places? _____

3. Do you have any other areas in your classroom that may facilitate the management of these learners?

   1 ☐ No 2 ☐ Yes (specify) _____

4. Describe these areas. _____

SECTION THREE INTERVENTIONS

1. Tick the intervention strategies that you adopt in your classroom *(You may tick more than one block)*

1 ☐ Charting
2 ☐ Time out
3 ☐ Contracts
4 ☐ Peer tutoring
5 ☐ Group work
6 ☐ Preventative cueing
7 ☐ Behavior modification
8 ☐ Proximity control
9 ☐ Other (specify) _____

2. What interventions are utilised for A.D.H.D. learners around the school and on the playground?

1 ☐ Time out
2 ☐ Detention
3 ☐ Verbal reprimanding
4 ☐ Strong staff presence
5 ☐ Designated areas of play
6 ☐ Other (specify) _____

3. Who administers medication to the learners diagnosed with A.D.H.D? *(You may tick more than one block.)*

1 ☐ Parent at home
2 ☐ Class teacher
3 ☐ School nurse
4 ☐ Other (specify): _____

4. In your opinion does medication help the learner diagnosed with A.D.H.D?

1 ☐ No (specify) _____
2 ☐ Yes (specify) _____

5. Are you aware of any side effects that these learners might have from taking this medication?

1 ☐ No (specify) _____
2 ☐ Yes (specify) _____

6. How do you monitor the medication of A.D.H.D. learners in your class? *(You may tick more than one block.)*

1 ☐ Observation
2 ☐ Charting
3 ☐ Other (specify) _____

7. What on - site support services does your school offer the A.D.H.D. learner? *(You may tick more than one block.)*

1 ☐ Individual Psychotherapy
2 ☐ Group Psychotherapy
3 ☐ Speech & Language Therapy
4 ☐ Remedial Lessons
5 ☐ Occupational Therapy
6 ☐ Other (specify) _____

8. What support services does your school offer to the parents of learners diagnosed with A.D.H.D.? *(You may tick more than one block.)*

1 ☐ Educator – Parent communication
2 ☐ Parent training
3 ☐ Parent support group
4 ☐ Talks by "experts"
5 ☐ News letters
6 ☐ Other (specify) _____

This questionnaire is to be completed by Educators in Special Schools. Information disclosed in this questionnaire is treated with strict confidentiality and will be used to understand the management of learners diagnosed with Attention Deficit Hyperactivity Disorder (A.D.H.D.) in Special Schools.

Unless otherwise indicated, please tick ✓ appropriate ☐ where applicable.

Contact details: (Voluntary)

Tel code: _____ Tel No: _____ Cell No: _____

E-mail address: _____

Thank you for your cooperation

EDUCATOR'S QUESTIONNAIRE

SECTION ONE BIOGRAPHICAL DATA

1. Educator's age: _____ yrs

2. Gender 1 ☐ Female 2 ☐ Male

3. Name of school: _____

4. Current grade taught: 1 ☐ Grade 1 2 ☐ Grade 2 3 ☐ Grade 3 4 ☐ Grade
5 ☐ Grade 5 6 ☐ Grade 6 7 ☐ Grade 7

5. Qualifications:

• Academic Qualification(s)	Description (e.g. Bachelor of Arts)	Majors / Specialisation (e.g. Psychology, English)
1 ☐ Bachelors Degree		
2 ☐ Honours Degree		
3 ☐ Masters Degree		
4 ☐ Doctorate Degree		

• Professional Qualification(s)	Description - (e.g. Transvaal Teachers' Senior Primary Diploma)	Majors / Specialisation - (e.g. Geography & Physical Education)
1 ☐ 2 yr. Teacher's Diploma		
2 ☐ 3 yr. Teacher's Diploma		
3 ☐ 4 yr. Teacher's Diploma		
4 ☐ Post graduate Diploma		
5 ☐ Other (please specify)		

6. Indicate your response to the following questions by filling in the relevant numbers:

1 ☐ Total years of teaching experience

2 ☐ Years of teaching learners diagnosed with A.D.H.D.

3 ☐ Total number of learners in your class in 2001.

4 ☐ Total number of learners in your class diagnosed with A.D.H.D.

5 ☐ Number of learners with A.D.H.D. currently on medication

7. How have you acquired an understanding of A.D.H.D.? *(You may tick more than one block)*

1 ☐ Degree 3 ☐ Workshops 5 ☐ Internet 6 ☐ Experience
2 ☐ Diploma 4 ☐ Literature/Books 7 ☐ Other (specify) _____

8. Have you attended specific training in the management of learners diagnosed with A.D.H.D.?

1 ☐ No 2 ☐ Yes

9. List courses / Workshops you have attended for Learners diagnosed with A.D.H.D. in the past three years.

_____

_____

SECTION TWO ORGANISATIONAL STRUCTURE

- Educators' style:

1. How would you describe your teaching style? (You may tick more than one block)

1 ☐ Authoritarian (strict & inflexible) 2 ☐ Authoritative (firm but flexible) 3 ☐ Democratic (compromise betw Educator & learner)

4 ☐ Laissez – Faire (non-interference) 5 ☐ Other (specify) _____

2. How do you think your teaching style impacts on the A.D.H.D. learner? _____

- Classroom management:

1. How do you manage an inattentive learner working independently? _____

2. How do you manage an inattentive learner working in a group? _____

3. How do you manage an impulsive learner working independently? _____

4. How do you manage an impulsive learner working in a group? _____

5. How do you manage a hyperactive learner working independently? _____

6. How do you manage a hyperactive learner working in a group? _____

7. List skills / strategies that you use to manage learners NOT medically diagnosed with A.D.H.D.?

- Physical environment:

1. Describe where your learners diagnosed with A.D.H.D. are seated in your classroom. _____

2. Why do you seat your A.D.H.D. learners in these places? _____

3. Do you have any other areas in your classroom that may facilitate the management of these learners?

1 ☐ No 2 ☐ Yes (specify) _____

4. Describe these areas. _____

SECTION THREE INTERVENTIONS

1. Tick the intervention strategies that you adopt in your classroom *(You may tick more than one block)*

1 ☐ Charting
2 ☐ Time out
3 ☐ Contracts
4 ☐ Peer tutoring
5 ☐ Group work
6 ☐ Preventative cueing
7 ☐ Behavior modification
8 ☐ Proximity control
9 ☐ Other (specify) _____

2. What interventions are utilised for A.D.H.D. learners around the school and on the playground?

1 ☐ Time out
2 ☐ Detention
3 ☐ Verbal reprimanding
4 ☐ Strong staff presence
5 ☐ Designated areas of play
6 ☐ Other (specify) _____

3. Who administers medication to the learners diagnosed with A.D.H.D? *(You may tick more than one block.)*

1 ☐ Parent at home
2 ☐ Class teacher
3 ☐ School nurse
4 ☐ Other (specify): _____

4. In your opinion does medication help the learner diagnosed with A.D.H.D?

1 ☐ No (specify) _____
2 ☐ Yes (specify) _____

5. Are you aware of any side effects that these learners might have from taking this medication?

1 ☐ No (specify) _____
2 ☐ Yes (specify) _____

6. How do you monitor the medication of A.D.H.D. learners in your class? *(You may tick more than one block.)*

1 ☐ Observation
2 ☐ Charting
3 ☐ Record keeping
4 ☐ Other (specify) _____

7. What on - site support services does your school offer the A.D.H.D. learner? *(You may tick more than one block.)*

1 ☐ Individual Psychotherapy
2 ☐ Group Psychotherapy
3 ☐ Speech & Language Therapy
4 ☐ Remedial Lessons
5 ☐ Occupational Therapy
6 ☐ Other (specify) _____

8. Does your school offer parent training to the parents of learners diagnosed with A.D.H.D.? Yes ☐ No ☐

9. What other support services does your school offer to the parents of learners diagnosed with A.D.H.D.? *(You may more than one block.)*

1 ☐ Educator – Parent communication
2 ☐ Parent support group
3 ☐ News letters
4 ☐ Talks by "experts"
5 ☐ Other (specify) _____

6 Brackenhurst
310 Vause Road
DURBAN
4001

Mrs Klopper
The Kenmont School
Private Bag X3
FYNNLAND
4020

2 May 2001

Dear Mrs Klopper

I refer to our telephonic conversation of Wednesday 2 May in which you granted me permission to conduct research in your school. As previously stated, this involves the administration of a questionnaire to all class educators from Grade One to Grade Seven inclusive.

I would greatly appreciate it if I could collect all of these completed questionnaires from your school secretary on Monday 14 May at 10h00. Please express my gratitude to all educators who made the time and effort to participate in this study.

I plan to have completed my thesis by the end of the year and will willingly give you feedback re: the outcomes.

Thank You.

Yours faithfully

Felicity Tonkinson

The Principal
The Kenmont School
Private Bag X3
FYNNLANDS
4020

10 May 2001

Dear Mrs Klopper

I would appreciate it if you could remind 16 of the class educators who participated in my research on ADHD, to complete the questionnaire and hand them to your school secretary for collection on Monday mid-day.

Once again, please extend my gratitude to all of those educators who kindly gave of their time and expertise.

Sincerely

Felicity Tonkinson
ph: 082-4872674

Frequency Tables

S1.1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	4	12.9	13.3	13.3
	2	10	32.3	33.3	46.7
	3	10	32.3	33.3	80.0
	4	6	19.4	20.0	100.0
	Total	30	96.8	100.0	
Missing	System	1	3.2		
Total		31	100.0		

S1.2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	30	96.8	96.8	96.8
	2	1	3.2	3.2	100.0
	Total	31	100.0	100.0	

S1.3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	16	51.6	51.6	51.6
	2	15	48.4	48.4	100.0
	Total	31	100.0	100.0	

S1.4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	3	9.7	9.7	9.7
	2	3	9.7	9.7	19.4
	3	6	19.4	19.4	38.7
	4	8	25.8	25.8	64.5
	5	4	12.9	12.9	77.4
	6	4	12.9	12.9	90.3
	7	3	9.7	9.7	100.0
	Total	31	100.0	100.0	

S1.5ACAD

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	6	19.4	66.7	66.7
	2	3	9.7	33.3	100.0
	Total	9	29.0	100.0	
Missing	System	22	71.0		
Total		31	100.0		

S1.5PROF

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	5	16.1	16.7	16.7
	3	10	32.3	33.3	50.0
	4	8	25.8	26.7	76.7
	5	7	22.6	23.3	100.0
	Total	30	96.8	100.0	
Missing	System	1	3.2		
Total		31	100.0		

S1.7.1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	3	9.7	100.0	100.0
Missing	System	28	90.3		
Total		31	100.0		

S1.7.2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	25	80.6	100.0	100.0
Missing	System	6	19.4		
Total		31	100.0		

S1.7.3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	13	41.9	100.0	100.0
Missing	System	18	58.1		
Total		31	100.0		

S1.7.4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4	26	83.9	100.0	100.0
Missing	System	5	16.1		
Total		31	100.0		

S1.7.5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5	13	41.9	100.0	100.0
Missing	System	18	58.1		
Total		31	100.0		

S1.7.6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	6	28	90.3	100.0	100.0
Missing	System	3	9.7		
Total		31	100.0		

S1.7.7

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	7	3	9.7	100.0	100.0
Missing	System	28	90.3		
Total		31	100.0		

S1.8

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	15	48.4	55.6	55.6
	2	12	38.7	44.4	100.0
	Total	27	87.1	100.0	
Missing	System	4	12.9		
Total		31	100.0		

S1.10

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	30	96.8	100.0	100.0
Missing	System	1	3.2		
Total		31	100.0		

S2.1.1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	3.2	100.0	100.0
Missing	System	30	96.8		
Total		31	100.0		

S2.1.2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	28	90.3	100.0	100.0
Missing	System	3	9.7		
Total		31	100.0		

S2.1.3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	25	80.6	100.0	100.0
Missing	System	6	19.4		
Total		31	100.0		

S2.1.4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4	1	3.2	100.0	100.0
Missing	System	30	96.8		
Total		31	100.0		

SPHYS3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	15	48.4	50.0	50.0
	2	15	48.4	50.0	100.0
	Total	30	96.8	100.0	
Missing	System	1	3.2		
Total		31	100.0		

S3.1.1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	14	45.2	100.0	100.0
Missing	System	17	54.8		
Total		31	100.0		

S3.1.2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	17	54.8	100.0	100.0
Missing	System	14	45.2		
Total		31	100.0		

S3.1.3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	28	90.3	100.0	100.0
Missing	System	3	9.7		
Total		31	100.0		

S3.1.4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4	23	74.2	100.0	100.0
Missing	System	8	25.8		
Total		31	100.0		

S3.1.5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5	22	71.0	100.0	100.0
Missing	System	9	29.0		
Total		31	100.0		

S3.1.6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	6	8	25.8	100.0	100.0
Missing	System	23	74.2		
Total		31	100.0		

S3.1.7

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	7	12	38.7	100.0	100.0
Missing	System	19	61.3		
Total		31	100.0		

S3.1.8

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	8	16	51.6	100.0	100.0
Missing	System	15	48.4		
Total		31	100.0		

S3.1.9

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	9	6	19.4	100.0	100.0
Missing	System	25	80.6		
Total		31	100.0		

S3.2.1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	21	67.7	100.0	100.0
Missing	System	10	32.3		
Total		31	100.0		

S3.2.2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	15	48.4	100.0	100.0
Missing	System	16	51.6		
Total		31	100.0		

S3.2.3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	27	87.1	100.0	100.0
Missing	System	4	12.9		
Total		31	100.0		

S3.2.4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4	17	54.8	100.0	100.0
Missing	System	14	45.2		
Total		31	100.0		

S3.2.5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5	21	67.7	100.0	100.0
Missing	System	10	32.3		
Total		31	100.0		

S3.2.6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	6	4	12.9	100.0	100.0
Missing	System	27	87.1		
Total		31	100.0		

S3.3.1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	21	67.7	100.0	100.0
Missing	System	10	32.3		
Total		31	100.0		

S3.3.3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	24	77.4	100.0	100.0
Missing	System	7	22.6		
Total		31	100.0		

S3.3.4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4	12	38.7	100.0	100.0
Missing	System	19	61.3		
Total		31	100.0		

S3.4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	31	100.0	100.0	100.0

S3.5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	6	19.4	19.4	19.4
	2	25	80.6	80.6	100.0
	Total	31	100.0	100.0	

S3.6.1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	24	77.4	100.0	100.0
Missing	System	7	22.6		
Total		31	100.0		

S3.6.2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	5	16.1	100.0	100.0
Missing	System	26	83.9		
Total		31	100.0		

S3.6.3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	24	77.4	100.0	100.0
Missing	System	7	22.6		
Total		31	100.0		

S3.6.4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4	8	25.8	100.0	100.0
Missing	System	23	74.2		
Total		31	100.0		

S3.7.1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	26	83.9	100.0	100.0
Missing	System	5	16.1		
Total		31	100.0		

S3.7.2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	29	93.5	100.0	100.0
Missing	System	2	6.5		
Total		31	100.0		

S3.7.3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	30	96.8	100.0	100.0
Missing	System	1	3.2		
Total		31	100.0		

S3.7.4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4	25	80.6	100.0	100.0
Missing	System	6	19.4		
Total		31	100.0		

S3.7.5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5	29	93.5	100.0	100.0
Missing	System	2	6.5		
Total		31	100.0		

S3.7.6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	6	4	12.9	100.0	100.0
Missing	System	27	87.1		
Total		31	100.0		

S3.8

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	9	29.0	33.3	33.3
	2	18	58.1	66.7	100.0
	Total	27	87.1	100.0	
Missing	System	4	12.9		
Total		31	100.0		

S3.9.1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	28	90.3	100.0	100.0
Missing	System	3	9.7		
Total		31	100.0		

S3.9.2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	26	83.9	100.0	100.0
Missing	System	5	16.1		
Total		31	100.0		

S3.9.3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	19	61.3	100.0	100.0
Missing	System	12	38.7		
Total		31	100.0		

S3.9.4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4	20	64.5	100.0	100.0
Missing	System	11	35.5		
Total		31	100.0		

S3.9.5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5	4	12.9	100.0	100.0
Missing	System	27	87.1		
Total		31	100.0		

S3.10

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	30	96.8	100.0	100.0
Missing	System	1	3.2		
Total		31	100.0		

Descriptives

			Statistic
S1.6.1	Mean		16.18
	95% Confidence Interval for Mean	Lower Bound	13.30
		Upper Bound	19.06
	Median		14.00
	Variance		61.718
	Std. Deviation		7.86
	Minimum		4
	Maximum		33
	Range		29
S1.6.2	Mean		6.23
	95% Confidence Interval for Mean	Lower Bound	4.33
		Upper Bound	8.14
	Median		5.00
	Variance		27.035
	Std. Deviation		5.20
	Minimum		1
	Maximum		19
	Range		18

			Statistic
S1.6.3	Mean		13.66
	95% Confidence Interval for Mean	Lower Bound	12.36
		Upper Bound	14.95
	Median		14.00
	Variance		11.591
	Std. Deviation		3.40
	Minimum		9
	Maximum		21
	Range		12
S1.6.4	Mean		8.62
	95% Confidence Interval for Mean	Lower Bound	7.05
		Upper Bound	10.19
	Median		8.00
	Variance		16.958
	Std. Deviation		4.12
	Minimum		3
	Maximum		20
	Range		17

			Statistic
S1.6.5	Mean		5.28
	95% Confidence Interval for Mean	Lower Bound	4.27
		Upper Bound	6.28
	Median		5.00
	Variance		6.993
	Std. Deviation		2.64
	Minimum		2
	Maximum		11
	Range		9