

**TEACHERS' UNDERSTANDING OF ATTENTION DEFICIT
HYPERACTIVITY DISORDER IN PUBLIC PRIMARY MAINSTREAM
CLASSROOMS: A NARRATIVE INQUIRY**

BY

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DECLARATION

I, Mr. Lucas Pillay (student number 213505629), declare that this dissertation is my own work, and has not previously been submitted by me, at any other university. It is my original work and I have acknowledged all the sources consulted and quoted, in the reference list.



Researcher: Mr. Lucas Pillay

Date: 25/11/2020

DEDICATION

I whole-heartedly dedicate my dissertation first, to the Glory of God – my Heavenly Father and my Lord and Savior Jesus Christ - who is my Creator, my strong pillar, my source of inspiration, wisdom, knowledge and understanding. He has been the foundation of strength throughout this study and on His wings only, have I soared. I also dedicate this dissertation to my parents; Daniel and Nalini Pillay who, have supported and encouraged me throughout life. Deep gratitude to you both, for instilling good morals and values in me.

*Commit to the LORD whatever you do, and HE will establish your plans –
Proverbs 16:3*

INJ JJ SDG

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ADHD- Attention Deficit Hyperactivity Disorder

DSM 5- Diagnostic and Statistical Manual of Mental Disorders, 5th Edition

LSEN- Learners with special educational needs

ABSTRACT

ADHD is one of the most commonly diagnosed conditions amongst children (Centers for Disease Control and Prevention, 2015). The dawning of democracy in South Africa implemented various governmental policies to promote equality, one of which is the White Paper 6, which outlines a framework for inclusive education. The implementation of inclusive education has intended that learners with learning barriers are frequently admitted in mainstream schools. Thus, mainstream teachers will find themselves teaching classes with diverse learning needs (Holtz & Lessing, 2002 & Perold et al., 2010). Hence, the role of teachers in supporting, accommodating, and assisting all learners with learning barriers, cannot be overstated. Undoubtedly, teachers play an essential role in observing, identifying, and referring learners who exhibit ADHD behaviour, for assessment. This is done so that these learners can be diagnosed and treated timeously. For this to take place, teachers are required to have a sound understanding of every aspect of ADHD. For this reason, this study explored teachers' understanding of ADHD in public primary mainstream classrooms. Furthermore, it deciphers reasons as to why teachers have enacted understandings of ADHD, in the way that they do and it focused on how teachers can alter their understanding. The study was conducted in a primary school in Phoenix, Durban. Six participants were purposely selected for this study. This study employed the qualitative approach and an interpretive paradigm, as it is grounded in the world of lived experiences. Data was produced through the use of collages, reflective journals, and interviews. Thereafter, a narrative was developed. The Barkley's Theory of ADHD was the theoretical framework that underpinned this study, which provided profound insights on how ADHD ought to be understood.

The data produced from the participants, demonstrate that teachers possess adequate understanding of the symptoms of ADHD. The data has also shown that teachers portray a reasonable amount of understanding concerning the treatment of the disorder. The accommodation of ADHD learners is well-executed by teachers in their mainstream classrooms. However, there is a lack of understanding regarding the full diagnostic process. Moreover, teachers have enacted their understanding due to their observations and experiences of the manifestation of ADHD, in their mainstream classrooms. Notably, the data produced through this study reveals the need for professional development of teachers to acquire a better and more accurate understanding of ADHD. Whilst teachers are confronted with this challenge of embracing learners with special needs, in the mainstream schooling system, teachers showed no resentment towards these learners.

CHAPTER ONE

BACKGROUND AND INTRODUCTION TO STUDY

1.1. Introduction

Behavioural change in learners is not uncommon in the home and school context. This change does not always bring about major concern, or a need for specialised attention. However, when unusual behaviour is evident, then focused attention of the parent and teacher is required. In saying so, Attention Deficit Hyperactivity Disorder maybe evident. Attention Deficit Hyperactivity Disorder is a prevalent developmental disorder, manifesting in behaviour that is inappropriate, or simply put, misbehaviour (APA, 2000). Furthermore, Attention Deficit Hyperactivity Disorder is one of the most predominant disorders that teachers will encounter in a classroom (Center for Disease Control and Prevention, 2013). According to Meyer (2012), teachers are a valuable source of information regarding the identification and referral of the condition. Moreover, teachers play a primary role in establishing a classroom inclusive of favorability to the teaching and learning and emotional and social success for learners with ADHD. For this reason, this research study aimed to explore teachers' understanding of Attention Deficit Hyperactivity Disorder (henceforth referred to as ADHD) learners in public primary mainstream classrooms.

In this first chapter, attention is drawn to the location of study, purpose of study, and the rationale for embarking on the study. Additionally, it includes the significance of the study, as well as the objectives and research questions. Furthermore, I briefly explore the theoretical perspective and the methodology (details in Chapter Four). This chapter serves to provide the context for the problem and the rationale, after which it provides an overview of this study.

1.2. Location of study

This study was conducted in Phoenix, Durban, in a school that consists of multiracial learners and teachers. A pseudonym has been given to the school to protect its identity. *Champion Primary School* is situated in a historically Indian urban context, with most learners belonging to families with low incomes. This school belongs to Quintile Five. South Africa's Department of Education (DoE), has been determined to achieve "redress, equity and quality" (DoE, 2006) in the education system since 1994, where a quintile funding system as stipulated in the 2000 National Norms and Standards for School Funding, was an apparatus put in place to attain these goals.

From my collaboration with teachers who have been teaching at Champion Primary School for many years, they have many concerns regarding the deterioration of discipline in learners. Many of these teachers are unable to decipher reasons for these ill-disciplined learners. For this reason, I had chosen this school to conduct my research.

The dawn of democracy in South Africa has made way for this school to admit learners from the neighbouring townships such as KwaMashu, Amouti, Inanda and Mount Royal, as well as from the local area in which the school is located. Whilst most of these learners come from poor socio-economic home environments, in which separation and abandonment are common, there are learners who belong economically to average and above average households. Champion Primary has approximately 760 learners, ninety percent of whom, are from historically underprivileged homes. Moreover, the school consists of twenty-two full time teachers, three heads of department for Foundation Phase, Intermediate Phase and Senior Primary Phase, and the school is piloted by a principal. The school consists of classes from Grade RR to Grade 7, with two classes per grade, with approximately 45 to 50 learners per class. Whilst the school may function with limited resources and receive learners that come from areas where unemployment and poverty are rife, the school has been successful over the years, where graduating learners have been admitted into universities to become professionals.

1.3. Purpose of study

The purpose of this study was to explore teacher's understanding of ADHD learners, their experiences, and methods on how to acquire a better understanding of ADHD in mainstream public primary school classrooms. Purdie, Carroll, and Hattie (2002, p. 80) state that "to address the educational success of learners who may have ADHD, it is important that educators directly address their educational difficulties." This may be accomplished if teachers are aware of ways in which they might address the educational difficulties, considering the challenges faced by ADHD learners; moreover, to create awareness for the participating schools as to types of approaches and strategies that might assist teachers in expanding their knowledge on ADHD, which will aid in their professional growth. This will also assist in eliminating any misconceptions of ill-disciplined learners.

Exploring what and how teachers understand ADHD as a disorder and ADHD learners in their classrooms will result in information that can assist in finding methods of how teachers embrace ADHD learners in their classrooms. This will result in gaining information on the nature of psycho-educational and psycho-social support as required to support inclusion. These

discoveries may possibly be appropriate to institutions that produce teachers. These institutions could gain valuable data of the experiences of teachers teaching ADHD learners in mainstream classrooms as it will influence the way in which future teachers are equipped. Additionally, it will inform practicing teachers who may be struggling with ADHD learners in their classrooms. This study aids teachers on behaviour management for successful classroom interactions and for the teaching and learning process to take place with greater ease and efficacy. The narratives derived from participant's responses educate school principals, parents, ADHD support groups and teacher training institutions, on teachers' understanding of ADHD in the classroom. As Lopes (2008, p.4) notes, "This information may be useful when looking at what kind of support educators would need from school staff, what kind of further training would be needed and what kind of information and contact, would be needed with parents".

1.4. Rationale

For the past three years of teaching in a mainstream primary school, I have encountered many teachers, including myself, complaining about a handful of learners who are troublesome in class. Of course, not all misbehaviour can be attributed to ADHD, but being passionate about ADHD myself, I have reviewed literature that expanded my knowledge with regards to ADHD learners, specifically the symptoms. The teachers identified that the learners are easily sidetracked, do not follow instructions, are incapable of sitting still and paying attention, and endlessly disrupting the teaching and learning process. Often, these learners are punished and labelled as ill-disciplined, or misbehaving. However, it is likely that these learners are struggling with ADHD, and are undiagnosed.

As mentioned before, from the experience of collaborating with teachers who have been teaching at Champion Primary School for many years, they have many concerns regarding the deterioration of discipline amongst learners. Many of these teachers are unable to decipher reasons for these ill-disciplined learners. This arouses fear in teachers, as they feel that these learners have ADHD, but they are not offered much support by which to deal with this barrier. Ramphal (2010) mentions that due to teachers having a poor understanding of ADHD, they often shut ill-disciplined learners out of their classes. Furthermore, Perold, Louw, and Kleyhans (2010) discovered that there remains a considerable lack of understanding amongst teachers in certain aspects of ADHD, specifically its symptoms. Hence, if ADHD is present at schools, one can ask whether teachers truly understand ADHD, to effectively deal with and manage these learners. Evidently, there are not many studies conducted in the South African context regarding ADHD, specifically in classrooms (Purdie et al., 2002). However, the few studies

that are accessible either concentrates on “inclusive education (Holz & Lessing, 2002), the diagnosis of the learner (Meyer, Eilertsen, Sundet, Tshifularo & Sagvolden, 2004) or how to treat the learner with cognitive individual therapy (Karande, 2005; Yeschin, 2000).” This study will add to the body of existing research and knowledge regarding ADHD within South African mainstream classrooms.

1.5. Study significance

Purdie et al. (2002) note that there are not many studies of ADHD in the classroom, specifically within a South African perspective. As mentioned before, the studies that are presented on ADHD in the classroom in South Africa either focus on inclusive education (Holz & Lessing, 2002), the diagnosis of the learner (Meyer, Eilertsen, Sundet, Tshifularo & Sagvolden, 2004), or how to treat the learner with cognitive individual therapy (Karande, 2005 & Yeschin, 2000). There is a lacuna concerning teachers’ understanding of ADHD in mainstream classrooms. Consequently, this study will add to the body of existing research and knowledge in South Africa on ADHD. Moreover, it will aim to address the gap by exploring teachers’ understanding as well as their experiences of teaching ADHD learners.

Inclusive education, as noted, holds that teachers must embrace learners with learning barriers, in this case, learners with ADHD, and to accommodate for these learners in their mainstream classrooms. Purdie et al. (2002) note that “To address the educational success of learners who have ADHD, it is important that educators (and parents) directly address their educational difficulties.” (p. 90). In so stating, this may be accomplished if teachers are assisted and trained to manage the educational difficulties, whilst juggling with the challenges of embracing ADHD learners. Moreover, whilst the difficulties faced by ADHD learners are progressively being recognised, research efforts on ADHD have intensely escalated over the last decade and although abundant information is currently available, more research is still needed in certain areas (Kendall, 2008). As mentioned earlier, most literature concentrates on the assessment (Carey 1999), etiology and epidemiology (Diller, 1999; Richards, 2001), and the diagnosis, management, and treatment of ADHD (Fabiano & Pelham, 2003).

Extant literature in the South African context needs to pay much attention to the individual experience of teachers teaching ADHD learners. Regarding an educational perspective, Durbach (2002) explored the ways in which teachers can deal with “scattered minds”. This also included the perceptions of these teachers pertaining to ADHD in the mainstream classroom. Additionally, Kleynhans (2005) unambiguously collected data pertaining to primary school

teachers' knowledge and misperceptions of ADHD. Kendall (2008) "This study used a quantitative methodology to explore how teachers perceive children with ADHD and what insight and misconceptions they have regarding the disorder" (p. 12). From available literature, it can be determined that the experiences of teachers dealing with ADHD in the classroom has only just been considered as vital and pertinent in understanding ADHD, and has not yet been methodically researched. According to Kendall (2008, p 32), "no studies on primary school teachers' experiences of dealing with children diagnosed with ADHD using a qualitative methodology were found". Thus, this study addressed the gap in the body of existing research and knowledge pertaining to teachers' understanding of attention deficit hyperactivity disorder in public primary mainstream classrooms by providing a substantial understanding of ADHD, so that learners may be referred for psychological assessment as the understanding of ADHD, can provide insight into their capacity to accurately identify and support affected learners.

1.6. Objectives

1.6.1. Main objective

To explore teachers' understanding of ADHD in public primary mainstream classrooms.

1.6.1. Secondary objectives

- a) To explore what is the teachers' current understanding of ADHD in public primary mainstream classrooms.
- b) To explore why teachers have enacted these understanding of ADHD in public primary mainstream classrooms, in the way that they do.
- c) To identify how teachers can acquire additional information of ADHD in public mainstream classrooms.

1.7. Research questions

- 1) What are teachers' current understanding of ADHD in public primary mainstream classrooms?
- 2) Why do teachers enact these current understandings of ADHD in public primary mainstream classrooms in the way that they do?
- 3) How can teachers acquire additional information of ADHD in public mainstream classrooms?

1.8. Theoretical framework:

The theoretical framework that will be used is *Barkley's Theory of ADHD*. This Theory of ADHD is referred to as a leading theory, which provides profound insights into how ADHD ought to be understood (Bailey, 2000; Berlin et al., 2004; Fischer, Barkley, Smallish & Fletcher, 2005; Meaux, 2000; Nicpon, Wodrich & Robinson Kurpius, 2004 & Purdie et al., 2002). This theory is known as a hybrid theory, points to the fact that the deficiency in behavioural inhibition that characterises learners with ADHD reduces the effective operation of four executive functions: (1) working memory; (2) internalisation of speech; (3) self-regulation of affect, motivation and arousal; and (4) reconstitution, that sub-serve self-control and goal-directed motor behaviour (Quay & Hogan, 1999 & Berlin et al., 2004). Moreover, since Barkley's theory is widely documented as a notable development in our understanding of ADHD supporting a large body of literature and scientific observations about the disorder, it may be seen as beneficial to expand teachers' understanding on ADHD, in public primary mainstream classrooms.

1.9. Methodology

With the focus of this study being teachers' understanding of ADHD in public primary mainstream classrooms, it appeared appropriate for me to utilise the methodological approach of narrative inquiry. Additionally, this study employed the qualitative approach and the interpretive paradigm was used, as it is grounded in the world of lived experiences. Moreover, to obtain rich data to support the study, collages, reflective journals, and semi-structure interviews were used as data collection methods. Participants were purposely sampled as contributors to this study.

1.10. Overview of research project

Chapter One discussed the context and background of the study. Additionally, this chapter has presented the purpose, rationale, significance, objectives of this study. It also provided the research questions pertaining to this study.

Chapter Two consists of a literature review and articulates perceptions of *Attention Deficit Hyperactivity Disorder*, in the schooling context.

Chapter Three discusses a theoretical framework which will guide the study.

Chapter Four discusses the research design, methodology, research paradigm, research sample and methods used in the study.

Chapter Five presents and analyses the data collected for this study. It also includes a discussion of the findings.

Chapter Six is the final chapter of the study, which contains a concluding discussion on the findings. These findings reflect the nature and purpose of the study, which was to explore teachers' understandings of ADHD in public primary mainstream classrooms.

1.11. Chapter conclusion

This chapter has discussed the context and background of the study. It focused on the goals of the study and presented the objectives and key questions, to be achieved in the study. The following chapter seeks to confer a literature review of current findings on teachers' understandings of ADHD in public primary mainstream classrooms.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

The previous chapter discussed the context and background of the study. It also aimed to contextualise this study and presented the objectives and key questions to be achieved in it. This chapter details literature reviews of current findings, on teachers' understandings of ADHD in public primary mainstream classrooms. Moreover, it presents insights on ADHD that include its origin, diagnosis, etiology, epidemiology, factors, controversies, and manifestations within the classroom and interventions.

Attention Deficit Hyperactivity Disorder is the most common mental health diagnosis in children (Polanczyk et al., 2014; Singh, 2011; Varley, 2011; Wu et al., 2017). According to Bagwell et al. (2001); Birchwood and Daley (2012); Johnston and Mash (2001); and Wehmeier, Schacht, and Barkley (2010), children diagnosed with ADHD experience lower mood, higher anxiety, and greater academic difficulty than those without the diagnosis. Moreover, they are faced with amplified stigma and have reduced quality social interactions with peers and even family members (Bringewatt, 2011 & O'Driscoll et al., 2012). As a result of its manifestation, ADHD affected children find it difficult to adjust and manage in the schooling environment, which requires them to conform to rules and conduct themselves acceptable to society's norms of behaviour.

Within South Africa, "statistics of ADHD shows approximately 3-6% of the general child population, meeting the criteria for some type of ADHD diagnosis which portrays that it is very likely that a teacher may have at least one child diagnosed with ADHD in his/her classroom" (Venter, 2006, p. 143). Hence, teachers play a significant role in providing information of an observational nature to health care professions, about a learner's conduct at school (Schellack & Meyer, 2012). Schellack and Meyer (2012) further express that the information provided to healthcare professions by teachers, will form the basis for the accurate diagnosis of learners who may be affected with ADHD. Therefore, it is important that teachers have a substantial understanding of ADHD, so that learners may be referred for psychological assessment as the understanding of ADHD, can provide insight into their capacity to accurately identify and support affected learners.

2.2. The concept of understanding

According to Murphy (2019, p. 18), “conceptual understanding is an important goal in learning in general but is particularly relevant in science education because such understanding is required to make sense of phenomena.” To understand, is having the ability to develop a meaning, to interpret and elucidate (Anderson et al., 2001). Rittle-Johnson, Siegler and Alibali, 2001 note that “it involves understanding of the principles that govern a domain and of the interrelations between units of knowledge in a domain” (pp. 346-347). Contrasting conceptual understanding with conceptual misunderstanding involves conceptions that are “wrong and flawed” (Gurel, Eryılmaz & McDermott, 2015) and in conflict with methodical knowledge or claims. These conceptions may be termed alternate conceptions, misconceptions, preconceptions, alternative frameworks, children’s science, [or] naive conceptions (Coştu, Ayas & Niaz, 2012, p. 49). Misunderstandings and misconceptions can be persistent (Sangam & Jesiek, 2012), and can interfere with learning (Ebenezer, Chacko, Kaya, Koya & Ebenezer, 2010), and resist change (Turgut, Gurbuz & Turgut, 2011).

2.3. Definition of ADHD

Attention Deficit Hyperactivity Disorder (ADHD) is defined as “a chronic and pervasive pattern of developmentally inappropriate levels of inattentiveness, hyperactivity and impulsivity manifesting in early childhood” (American Psychiatric Association, 2013, pp.103-106). According to Lougy, DeRuvo, and Rosenthal (2007) and Jiang et al. (2019), ADHD is currently seen as a disorder with behavioural, educational, emotional, and cognitive aspects, which may manifest daily in an ADHD affected individual. The revised Diagnostic and Statistical Manual of Mental Disorders-IV-Text (APA, 2000), explains ADHD as a developmental disorder characterized by inattention and hyperactivity, impulsivity or a combination thereof. Similarly, Baker (2005); Harisarsad (2010) and Picton (2002) note that ADHD may manifest itself in a learner being inattentive, hyperactive and impulsive, or having combined symptoms.

2.4. The origin of ADHD

ADHD was identified in the 1940s (Woods, 1997) and as time progressed, it became known as a hyperactive condition that involved impulsivity, disinhibition, and hyperactivity in children and adults (Sadock & Sadock, 2003). The individuals affected by this condition were referred to having a neurological impairment, triggered by the encephalitis epidemic in 1918. Diller

(1999) stated that during the 1950s and 1960s, children with hyperactivity were not an uncommon behaviour problem. Hersen and Ammerman (2002) and Arat et al. (2018) further discuss that in the late 1950s to mid-1960s, children exhibiting indications of poor organisation, learning barriers, and emotional lability, without detailed neurological damage, were categorised as having minimal brain damage. Moving forward to the 1970s, ADHD was referred to as 'hyperkinetic' or 'hyperactive' subsequent to the publication of the American Psychological Association's Diagnostic and Statistical Manual for Mental Disorders (DSM) in 1968 (Wodrich, 1994). In 1980, Attention Deficit Disorder (ADD) "became the preferred term when researchers identified inattention as the most important symptom of the disorder" (Wodrich, 1994, p.5). However, currently, Attention Deficit and Hyperactivity Disorder (ADHD) is utilised and the diagnosis of ADHD, is clear by its manifestations, which are the mainly "inattentive type, hyperactive-impulsive type, and combined type" (Sadock & Sadock, 2003, p.601).

2.5. Diagnosis of ADHD

An individual can be correctly diagnosed with ADHD only by a psychologist or a medical practitioner (Schellack & Meyer, 2012). *The Diagnostic and Statistical Manual of Mental Disorders-IV-Text Revised (APA, 2000)* (henceforth DSM-IV-TR), is a tool that is used to diagnose a learner with ADHD whereby a specific criterion needs to be met. According to the DSM-IV-TR, ADHD is diagnosed if there are extant ADHD symptoms before twelve years of age, occurring for a period that is more than six months. Additionally, these symptoms must manifest in at least two different settings (e.g. home and school), and moreover, clear evidence of functional impairment in social, academic, or occupational domains, must be present (APA, 2013). Children with ADHD usually struggle with many diverse difficulties, which constitute the prime characteristics of ADHD (Alamri, 2014).

Additionally, the diagnosis of ADHD has been the subject of much debate by sociologists and educators (Alamri, 2014 & Barkley, 2019). According to the DSM-IV-TR (2000), there are no laboratory tests, neurological assessments, or attentional assessments that have been established as diagnostic tools in the assessment of ADHD. Instead, "a diagnosis is made on observations of a child's behavioural characteristics, concluded by parents and educators who then respond to a checklist of behaviors [sic]" (Stolzer, 2007, p. 10). Additionally, parents and teachers are required to complete a behaviour questionnaire which determines whether a child "always, often, sometimes or never" (Whitely, 2010, p.191) displays the symptoms of ADHD,

i.e. fidgeting, losing things, talking excessively, or being easily distracted and forgetful, as major symptoms of ADHD.

Furthermore, the DSM-IV-TR (APA, 2000) divides the symptoms of ADHD into two categories. The first recognised category focuses on the inattention aspect of ADHD. According to Kendall (2008) and Barkley (2019), inattention refers to the inability of a child giving close attention to specifics or instructions. This in return, results in impetuous mistakes made in school-related activities and other daily activities. Children that display the inattentive symptom of ADHD, often find themselves forgetful in daily activities and losing their belongings such as stationery, worksheets, etc.

The second group of symptoms focuses on the hyperactivity and impulsivity. Kendall (2008, p. 25) explains that hyperactivity comprises of “learners fidgeting with hands or feet, difficulty in sitting still for prolonged periods of time, and talking excessively and the impulsivity symptom, includes behaviour such as blurting out answers before questions have been fully asked, interrupting others, and difficulty in waiting a turn.” By displaying such symptoms of ADHD, it is evident that proper classroom management is challenged. Classrooms will comprise of ADHD learners and learners without learning difficulties which creates a greater strain on the teacher.

As mentioned before, six or more symptoms of inattention are required, which have persisted for at least six months, and to a degree that is considered developmentally inappropriate (Holz & Lessing, 2002; Sadock & Sadock, 2003). Sadock and Sadock (2003, p. 1224), further express that the diagnosis of ADHD requires “persistent, impairing symptoms of either hyperactivity/impulsivity or inattention that cause impairment in at least two different settings”.

The formal diagnostic criteria for ADHD according to the DSM-IV-TR (APA, 2000), are as follows:

A. Either Group (1) or (2):
(1) Six (or more) of the following symptoms of inattention have persisted for at least six months to a degree that is maladaptive and inconsistent with developmental level:
<u>Inattention</u> (a) Often fails to give close attention to details or makes careless mistakes in schoolwork, work or other activities. (b) Often has difficulty sustaining attention in tasks or play activities. (c) Often does not seem to listen when spoken to directly. (d) Often does not follow through on instructions and fails to finish schoolwork, chores or duties at the workplace (not due to oppositional behaviour or failure to understand instructions). (e) Often has difficulty organising tasks and activities. (f) Often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework). (g) Often loses things necessary for tasks and activities (such as toys, school assignments, pencils, books or tools). (h) Is often easily distractible by extraneous stimuli. (i) Is often forgetful in daily activities.
(2) Six (or more) of the following symptoms of hyperactivity-impulsivity have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level:
<ul style="list-style-type: none">• <u>Hyperactivity</u> (a) Often fidgets with hands or feet or squirms in seat. (b) Often leaves seat in classroom or in other situations in which remaining in your seat is expected. (c) Often runs about or climbs in situations in which it is inappropriate (in adolescents or adults may be limited to subjective feelings of restlessness). (d) Often has difficulty playing or engaging in leisure activities quietly.

(e) Is often “on the go” or often acts as if “driven by a motor”.

(f) Often talks excessively.

- ***Impulsivity***

(g) Often blurts out answers before questions have been completed.

(h) Often has difficulty waiting turn.

(i) Often interrupts or intrudes on others (such as butting into conversations or games).

B. Some hyperactive-impulsive or inattentive symptoms that caused impairment were present before the age of seven.

C. Some impairment from the symptoms is present in two or more settings (example at school, work or home).

D. There must be clear evidence of clinically significant impairment in social, academic or occupational functioning.

E. The symptoms do not occur exclusively during the course of a Pervasive Developmental Disorder, Schizophrenia, or other Psychotic Disorder and are not better accounted for by another mental disorder such as Mood Disorder, Anxiety Disorder, Dissociative Disorder or a Personality Disorder.

Code based on type:

- ***Attention-deficit/hyperactivity disorder, combined type:*** if both Criteria A1 and A2 are met for the past six months.
- ***Attention-deficit/hyperactivity disorder, predominantly inattentive type:*** if Criteria A1 is met but Criteria A2 is not met for the past six months.
- ***Attention-deficit/hyperactivity disorder, predominantly hyperactive-impulsive type:*** if Criteria A2 is met but Criteria A1 is not met for the past six months.

The symptoms of ADHD manifests themselves in levels of severity, which includes mild, moderate, and severe and the level is viewed as a signal of the prognosis (Hersen & Ammerman, 2000). Hersen and Ammerman (2000), further discuss that a mild degree of ADHD refers to behavioural symptoms that meet the diagnostic criteria for ADHD, but displays only mild dysfunction in school and social relationships. The moderate symptoms show substantial complications at home, school and with peers, where additional difficulties such as learning barriers and impulsive behaviour, could exist. Additionally, in the moderate symptom, children have low self-esteem and display unruly behaviour. The severe symptoms

of ADHD comprise significant difficulties at school, with parents and siblings, and with other social interactions (Hersen & Ammerman, 2000). Holz and Lessing (2002, p. 109) state that “coexisting problems of learning disabilities and impulsive behaviour, is almost always present.”

Whilst the DSM-IV-TR contains profound insights regarding the indications of ADHD, Venter (2006, P.150) expresses that “not every child that presents with symptoms of ADHD can be formally diagnosed with ADHD.” In so stating, a small number of children could possibly have a health condition such as a mood disorder or also known as an affective disorder. On the one hand, Venter (2006, p. 144), articulates that “ADHD-like symptoms may be secondary to learning disabilities, limited sensory abilities or below average cognitive potential.” This indicates that the social aspect of a child’s being ought to be observed at first. On the other hand, Sadock and Sadock (2003, p.1219) state that “for the purposes of an accurate diagnosis, the child’s relationships with siblings, peers, and adults in structured and unstructured environments, need to be observed and evaluated, as it may give valuable insight into the occurrence and complications of ADHD.”

Sadock and Sadock (2003) state that the reports containing a child’s early development patterns, as well as observational recordings from home and school is vital for the diagnosis. Additionally, Holz and Lessing (2002) and Sadock and Sadock (2003, p. 1225) state that “school history and teacher’s reports, are essential in assessing whether a child’s learning difficulties and inappropriate behaviour is due primarily to maturational problems, or poor self-image as a result of felt inadequacies.”

Furthermore, a neurological examination could be essential for diagnosing a child or adult with ADHD, “as it may disclose visual, motor, perceptual, or auditory discriminatory impairments, without explicit symbols of visual or auditory perception disorders” (Sadock & Sadock, 2003, p. 989). Holz and Lessing (2002) and Sadock and Sadock (2003) state that children with ADHD are more likely to display signs of soft neurological damage, such as problems with motor coordination and right-left discrimination and midline-crossing. Consequently, it can be said that an accurate diagnosis of ADHD is nonexistent, unless there is ample developmental proof, history of medical treatment, and reliable information from different teachers and parents are evident (Venter, 2006). In so stating, in the correct diagnosis of ADHD, the individual needs to fulfil the diagnostic criteria and undergo neurological examinations that may provide clarity of the symptoms experienced.

2.6. Etiology of ADHD

The etiology of ADHD and treatment options remain a controversial topic among healthcare professionals. Sadock and Sadock (2003, p. 998) state that “since the 1960s, there have been many attempt to explain the reason for ADHD as it is played out today.” However, currently, there are no indications alleged to cause ADHD, “rather a combination of environmental and biological factors is considered as essentially contributory” (Sadock & Sadock, 2003, p. 143). Opinions pertaining to the viable reasons for ADHD are generally contentious and significant responses remain abstruse. Nevertheless, Holz and Lessing (2002); Sadock and Sadock (2003) and Venter (2006, p. 147) and Sciberras et al. (2017) note that at present there is consensus among health practitioners and researchers, regarding certain possible factors related to the etiology of ADHD, such as a genetic component, developmental factors, neurophysiological factors, as well as neurochemical factors.

2.7. Epidemiology of ADHD

Epidemiology denotes “the study of patterns of disease in human populations and of the factors that influence these patterns” (Hersen & Ammerman, 2000, p. 37). In the United States of America, “ADHD is reported in 3-7% of primary school children and in the United Kingdom, less than 1% of children are reported to have ADHD” (Kendall et al. 2011, p. 21). Within the South African context, “roughly 5% of children meet the diagnostic criteria for ADHD and experimental data indicate that it is the most prevalent psychiatric disorder among South African children” (Meyer, 1998, p. 187). Furthermore, additional South African data presented regarding occurrence of ADHD (Venter, 2006) reveals that an approximate 8% of the child population is diagnosed with ADHD.

Significantly, Kleynhans (2005) and Fayyad et al (2017) presents that an estimated 85% of children with ADHD will display symptoms persisting into adolescence and 31% will display persisting symptoms and behaviours into adulthood, which indicates that there might be at least one child with ADHD in a classroom. Additionally, in the United States, ADHD is frequently diagnosed more in males than in females (Sadock & Sadock, 2003). Likewise, within South Africa, more males are diagnosed with ADHD than girls (Venter, 2006).

2.8. Factors contributing to ADHD

2.8.1. The genealogical factor of ADHD

Venter (2006, p.145) states that “in more than 80% of South African cases, genetic factors are identified as contributory in the development of ADHD”. This data is inconsistent with former ideology, where ADHD is influenced by heritable factors only (Hinshaw, 1994). The identified genes believed to be the cause of ADHD, together with certain environmental factors, ultimately cause the disorder (Holz & Lessing, 2002; Venter, 2006). Sadock and Sadock (2003) express that it appears that a genetic element in the development of ADHD as a certain contributory factor is no longer doubtful among researchers, as biological parents of children with ADHD have a greater risk of having the disorder themselves than do adoptive parents. Correspondingly, there may be a greater risk of inattention and hyperactive symptoms in the siblings of children with ADHD rather than the general population (Holz & Lessing, 2002; Sadock & Sadock, 2003). These claims may prove genetic correlation in ADHD children.

2.8.2. Developmental factors

Speculations that some ADHD affected children may have had an elusive injury to the central nervous system (CNS) and brain development throughout the prenatal development: “the hypothesized brain damage may potentially be associated with circulatory, toxic, metabolic, mechanical, or physical insult to the brain during early infection, inflammation, and trauma” (Sadock & Sadock, 2003, p.1224). Riccio et al. (1993), articulate that even as “ADHD is believed to involve specific neurological damage; research has shown that areas of the right brain hemisphere may be malfunctioning, and that frontal lobe development and performance may be anomalous.” Still, many children with CNS damage and/or neurological disorders caused by brain injuries exhibits no symptoms of ADHD, and therefore neurological damage seen as a causative is strongly contested (Sadock & Sadock, 2003). Moreover, other contributory factors to the development of ADHD include prenatal toxic exposures, prematurity, and prenatal damage to the fetal nervous system (Sadock & Sadock, 2003), as well as low birth weight and diseases in formative years (Hinshaw, 1994).

2.8.3. Psychosocial factors

More than a few reasons have been recognised as causative to the commencement and continuance of ADHD as a disorder. This incorporates events that were stressful such as violence, neglect, and divorce; disruption of family equilibrium; and other anxiety-inducing

factors (Sadock & Sadock, 2003). Research indicates that children who belong to safehouses or orphanages commonly exhibit overactive behaviour and possess lack of attention (Sadock & Sadock, 2003). While socioeconomic status is not a cause for ADHD (Sadock & Sadock, 2003), this has not been fully researched. Irrespective of the etiology of ADHD, the reality of ADHD is not contested by researchers and health care professionals. No matter what the contributing factors are, ADHD is a real and present condition that, if ignored, it will hamper a child's development and growth.

2.8.4. Ecological and dietetic factors

According to Hersen and Ammerman (2002), food additives, preservatives, and excessive sugar have been recommended by previous literature, as probable effects of hyperactive behaviour. Nevertheless, there are no scientific indications present to establish this (Sadock & Sadock, 2003). Moreover, numerous ecological elements have been recognised as potential causes of ADHD (Hersen & Ammerman, 2000; Holz & Lessing, 2002). According to Riccio et al. (1993, p. 1845), these may comprise “raised blood levels, birth complications, maternal smoking, and the intake of high volumes of food additives, preservatives, and sugar.” Regrettably, Milberger, Biederman, Faraone and Jones (1998, p. 358) articulate that “alcohol and nicotine exposure in the mother's womb, have been shown to increase the chances of the development of ADHD by up to fifty percent.”

2.8.5. Neurochemical factors

Woods and Ploof (1997, p. 79) express that “neurochemical factors have been believed to be contributory to the development of ADHD from the 1970s and research in this area found specifically the lack of the neurotransmitter dopamine as causal.” Sadock and Sadock (2003) confirm this by stating that “many neurotransmitters are associated with the symptoms of ADHD”. The premises about the neurochemistry of ADHD evolved from the effect of drugs on indicators of attention and hyperactivity symptoms (Sadock & Sadock, 2003; Venter, 2006). Additionally, studies have commended conceivable lack in the production of dopamine and norepinephrine neurotransmitters (Sadock & Sadock, 2003), leading to the usage of medication such as Ritalin for the treatment of this disorder (Diller, 1999).

South African research makes evident that there is a lack of dopamine in the synapses of confined areas in the brain for those who have ADHD (Venter, 2006). Consequently, Venter (2006) further expresses that ADHD learners display concentration and attention, which are

controlled by the production of dopamine. Additionally, it has been documented that “noradrenaline paths are also related to attention, concentration and cognitive function, emotions, energy, and agitation” (Venter, 2006, p. 151).

2.9. Controversies surrounding ADHD:

Barkley (2002) states that Attention Deficit Hyperactivity Disorder (ADHD) is one of the most controversial and contentious of all the childhood disorders. The controversy is despite the understanding of its symptoms, causes as well as the best treatment interventions, and their subsequent result. Notwithstanding the considerable amount of literature and data concerning ADHD, it remains frequently misunderstood as Gargiulo (2010, p.241) states that “it is a disability plagued by misconceptions and myths”. As mentioned in the rationale of this study, ADHD is often misinterpreted by the behaviour of a learner with ADHD and the learner is labeled as rude, disobedient, and unmotivated by parents and teachers alike. While ADHD is seen to be evident through its manifestation, there remain numerous questions concerning the legitimacy of ADHD. Gargiulo (2010) states that it can be assumed that this condition has been “created” to alleviate parents of the responsibility and blame for their child’s uncharacteristic behaviour. Moreover, some believe that the causes of ADHD are organic and biological, whereas others believe that ADHD may be caused by environmental factors, such as the parent-child interaction (Sines, Saunders & Forbes-Burford, 2009). Furthermore, Perold, Louw and Kleynhans (2010) express that not only is there misunderstanding and misinterpretation amongst parents and doctors about ADHD, but amongst teachers as well.

Much of the literature argues that there is no consensus on an agreed definition for the disorder. On one hand, the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) issued by the American Psychiatric Association (2013), defines ADHD as a ‘neurodevelopmental disorder’, where on the other hand, the International Classification of Diseases and Related Health Problems refers to ADHD as a ‘hyperkinetic disorder’ (World Health Organization, 1992). Also, ADHD may also be defined in various ways within the field of research. Each definition provides an understanding into the writer's philosophical position pertaining to the nature of ADHD. Furthermore, it is not uncommon to see ADHD defined as a neurobiological condition (Quinn, 2008), a neurodevelopmental disorder (Mrug et al., 2012), a mental disorder (Benkert et al., 2010) and a heterogeneous condition (Newcorn et al., 2001; Faraone and Biederman, 1998). Additionally, historically, ADHD was labeled as: “attention deficit disorder (ADD), hyperkinetic disorder (HKD), hyperkinesis, minimal brain

dysfunction, minimal brain damage (MBD), and disorder of attention, motor control, and perception (DAMP)” (Carr, 2006, p. 421). Irrespective of the definitions given to ADHD, children and learners with ADHD remain to present with severe and pervasive symptoms of inattention, hyperactivity, and impulsivity.

Furthermore, ADHD is viewed as a controversial disorder for other numerous reasons: “its cause is unknown, its diagnosis subjective and the long-term efficacy and safety of its treatment are unclear” (Price & Raffelsbauer, p. 114). However, the question remains as to whether the combination of intricate etiology and heterogeneous diagnostic criteria is sufficient to argue its existence as a recognisable and legitimate neurodevelopmental disorder. Furman (2008, p.84) argues “that evidence for a genetic or neuroanatomic cause of ADHD is insufficient and [...] ADHD is unlikely to exist as an identifiable disease”. Furman (2008) further states that inattention, hyperactivity, and impulsivity are indicators of many other treatable medical, emotional and psychosocial conditions that may affect children.

Lange, Reichl and Lange (2010) articulate that many critics have implied that the diagnosis of ADHD is done to label children that are not ill as children with behaviour that is at the extreme end of the normal ranges. Moreover, Price and Raffelsbauer (2012, p. 112) state that “controversy also continues to grow over medicines used to treat ADHD, their efficacy, tolerability, safety, long-term effects, and abuse potential, as well as social and ethical issues on ADHD diagnosis and treatment,”

2.9.1. Controversies concerning the existence and clinical entity of ADHD

Extensive literature exists questioning the clinical medical-scientific legitimacy of ADHD. According to Perez-Alvarez (2017, p.1), “the controversy may be reduced to two opposite positions: the standard, which states its well-established existence, such that denying it would be like denying that the Earth is round, and the critical, which denies its clinical entity, such that those who argue for it would only be pathologizing normal behaviors and problems”. In stating such, these controversies surround the existence of ADHD through standard and critical lenses. Moreover, the controversy includes the critic of overdiagnosis and overmedication of those with ADHD.

Price and Raffelsbauer (2012, p.119) interrogate the controversies surrounding ADHD by asking the following: “Are the arguments against ADHD being a real clinical condition still valid taking into account the most recent findings in genetics, pathophysiology, and neuroimaging?” Additionally, they provide an assumption to their question by stating: “even if yes, does this view help relieve suffering of symptoms and impairments in ADHD patients? How can an unidentifiable disease be treated? Will the impact of undiagnosed ADHD on children’s daily living in family, school, and social settings ever be measured? What is the psychological burden of parents believing that the abnormal behaviour of their children is biologically not explainable? Is ADHD a by-product of poor parenting or miseducation?” (Price & Raffelsbauer, 2012, p.119). These questions are yet to be answered to better understand ADHD and to lessen the controversy surrounding it.

Even though the controversy is continuous, it does not justify whether ADHD exists or not. Perez-Alvarez (2017) articulates that through the critical lenses, it cannot deny the existence of ADHD with the notion that ADHD is an “invention” of the pharmaceutical industry. Even if it were found to be an invention, it does not imply that it would no longer establish a precise, pragmatic, and institutional reality. However, those who contend ADHD are unable to do so if they have ambiguous notions with rhetoric questionable implicit assumptions. Perez-Alvarez (2017) questions the reason for people creating a controversial position regarding ADHD. Perez-Alvarez (2017, p.2) state that “the controversy cannot be resolved in empirical scientific terms, on the plane of facts, as if the facts spoke for themselves, which is where it now stands.” Therefore, a metascientific and philosophical assessment is essential to determining whether ADHD exists. This can be an attempt to understand what it is that exists and how it came to be that way.

2.9.2. Controversies surrounding the diagnosis

Due to ADHD being largely subjective, it draws major criticism. Senior (2009) contends that ADHD is so argued with precision because of the diagnostic process being subjective as well. The diagnosis of ADHD is constructed on the distinctive guidelines established in the DSM-5 (American Psychiatric Association, 2013). Furthermore, Stead et al. (2006) state that the diagnosis is subjectively recognised by medical professionals through use of behavioural checklists and rating scales. Cohen (2006) express that there is no single standardised checklist

in use for ADHD diagnosis, but rather, there are at least two dozen, if not more. Therefore, an individual may be diagnosed with ADHD as a matter of degree, or personal opinion.

2.10. ADHD in the classroom:

The dawning of democracy in South Africa implemented various governmental policies to promote equality. Conceivably the most important policy concerning my study would be the Education White Paper 6 (Department of Education, 2001). This policy outlines a framework of inclusive education. According to Dalton, Mckenzie and Kahonde (2012), inclusive education aims to address the diverse needs of all learners who experience barriers to learning. The implementation of inclusive education has intended that learners with learning barriers are frequently admitted in mainstream schools. Thus, mainstream teachers will find themselves teaching classes with diverse learning needs (Holtz & Lessing, 2002 & Perold et al., 2010). Furthermore, the policy expresses that learners who have special needs, such as having a diagnosis of ADHD, should have a differentiated curriculum and evaluation system that might enable them to progress at their own rate and at their own level, while placed in mainstream classes.

Inevitably, there may be at least one learner affected by ADHD in a mainstream classroom, which can either be fully diagnosed or misdiagnosed. Holtz and Lessing (2002) approximations are that there ought to be at least one ADHD-affected learner in each South African classroom. Consequently, to embrace ADHD in classes, teachers need to adopt a learner-centred pedagogical approach (Prosser, 2008). According to Perold, Louw and Kleynhans (2010) there is a substantial lack of knowledge among teachers in certain key areas of ADHD. In addition, in the study conducted by Perold, Louw and Kleynhans (2010), teachers aired that they had very little or no training in ADHD and the management of ADHD in the classroom. Similarly, Hariparsad (2010) found that teachers needed more training and equipping on teaching learners diagnosed with ADHD, as professional development training on the matter had not been provided by the Department of Education. In stating so, this is noted as a gap in the body of existing knowledge. Studies in South Africa suggest that teachers, usually manage ADHD learners by providing them with alternate tasks (Lopes, Eloff, Howie & Maree, 2009). Furthermore, Davies (2010) expresses that in an evolving economy like South Africa there may be inadequate public knowledge of ADHD. Hence, teachers have a major role to play in identifying ADHD symptoms in the classroom. This gap was addressed within this study as it produced substantial understanding of ADHD which was supported by Barkley's (1998)

theory. Moreover, interested individuals may use this study as a developmental tool to enhance their understanding of ADHD.

Moreover, there are many difficulties that an ADHD learner may face, including complexity in concentrating on schoolwork, social interactions, and reduced executive operative skills (Kain, 2014). According to Biederman, Faraone, Milberger et al. (1996, p. 355), “children with ADHD are persuaded to join remedial courses and be put in special educational programs [sic].” Moreover, ADHD may also influence minimal test scores and increased level of suspensions, expulsion and repeating the same grade level (National Center for Learning Disabilities, 2014). However, the impact of ADHD can be addressed with adequate support given to the affected learner.

Consequently, the equipping of teachers to manage the behaviour of the child diagnosed with ADHD is seen as an important initial step for classroom management. The equipping or training must consist of knowledge of symptoms and treatment of diagnosing ADHD, as well as management of behaviour of the child in the classroom. Another gap to outline is that mainstream teachers, lack the understanding, tolerance, and knowledge of ADHD learners (Dore, 2010). Hence, teachers tend to overlook behavioural problems, or sometimes to shut the learner out from class lessons (Ramphal, 2010). This can be addressed by adopting the different techniques presented in this study.

2.11. A public mainstream teacher and ADHD:

Provided with the number of symptoms, information and treatment related to ADHD as well as the possible effect on academic achievement, it is imperative for teachers to be well-informed about this disorder. Teachers are important identifiers of ADHD within the classroom context. Once the learner has been diagnosed with ADHD, the teacher’s role does not end there. They are now required to create an environment that is conducive for the ADHD learner(s). Guerra and Brown (2012, p.20) state that “teachers lacked knowledge in the areas of the basis of ADHD, the characteristics of ADHD and the consequences associated with ADHD learners.” Furthermore, Pfiffner and Barkley (1998) argue that teachers often possess an inadequate understanding of the characteristics, complexities, and outcome of ADHD, thus resulting in teachers lacking intervention skills to assist and support learners affected with ADHD. Moreover, if teachers receive instructions pertaining to ADHD, it can positively impact intervention skills that they may provide.

Teachers who possess enhanced understanding of ADHD may feel empowered to support affected learners academically (Holz and Lessing, 2002). In addition, researchers found educational training, training opportunities, and administrative support related to teachers and schools are often alluded to as areas in need of more research in order to promote better adherence, fidelity and success in implementing classroom interventions (Efron, Sciberras & Hassell, 2008; Hattie & Timperley, 2007; Shah, Das, Desai, et al., 2016). Additionally, Rubie-Davies, Flint and McDonald (2012) reasoned that by exploring teacher characteristics, it provides a platform to explore which teacher abilities are related with best learner outcomes.

The way in which teachers understand ADHD will influence the nature of instruction used in the classroom when required to carry out specific interventions to aid ADHD learners (Krowski, 2009). Furthermore, to support Krowski (2009), Ford (2007) has argued that by understanding teachers' perceptions concerning the acceptability, effectiveness and rate of change for ADHD classroom interventions, it may assist in expediting the adoption and use of effective classroom behaviour approaches. Kos, Richdale and Hay (2006) articulate that there are few studies relating to teachers' knowledge or perceptions about children with ADHD. In addition, Sherman, Rasmussen and Baydala (2008, p. 391) have stated that "there is a lack of research in the areas of teachers' knowledge concerning students with ADHD and their academic achievement."

According Holtz and Lessing (2002, p. 103) "for teachers to create an environment conducive to successful learning for ADHD-affected learners, it is imperative that they have a sound knowledge of the nature of ADHD and the pedagogical skills to manage ADHD-type behaviour in the classroom". Scuitto et al. (2016) report on a cross-national study of teachers' knowledge and misconceptions of ADHD to concluded that, overall, teachers' knowledge was modest at best. Furthermore, previous research suggests that "teachers tend to feel insecure about dealing with behavioural problems" (Walter, Gouze, & Lim, 2006, p.62) and are not willing to accept responsibility for learners with learning barriers (Pijl, 2010).

A study by Perold et al. (2010) demonstrates findings by Scuitto, Terjesen and Frank (2000), they conclude that teachers' knowledge concerning ADHD was insignificant. Moreover, Scuitto, Terjesen, and Frank (2000) acknowledged that prior experience on teaching an ADHD-affected learner and receiving ADHD-specific training predicts the understanding teachers have of the condition. Mulholland et al. (2015) confirmed that years of teaching experience predicts teachers' knowledge or understandings of ADHD (Anderson, Watt, Noble, & Shanley,

2012; Bekle, 2004). Therefore, it can be assumed that the experiences of teaching ADHD learners in mainstream classrooms can influence the understandings of teachers concerning ADHD. Moreover, teachers contribute to identifying and referring ADHD learners for relevant diagnosis and support. Conversely, it is also advantageous to teachers to receive training to work with learners who are ADHD affected.

2.12. Interventions

2.12.1. Academic Interventions

Whilst medication and behavioral interventions will result in substantial declines in ADHD symptoms and enhancement in classroom behaviour, these interventions will not have much effect on academic achievement (DuPaul & Stoner, 2003). For this reason, interventions are needed to promote and stimulate academic achievement in ADHD learners. Evans, Pelham, and Grudberg (1995) revealed that learners in the senior phase presented with enhanced notetaking and test performance following explicit instruction by the teacher.

Moreover, academic interventions can be supported using technology and classroom peers. Interestingly, numerous studies have shown that “computer assisted instruction in mathematics (Mautone, DuPaul, & Jitendra, 2005, p. 305) and reading (Clarfield & Stoner, 2005, p. 250) leads to momentous developments on task behavior and academic performance for ADHD learners as compared to written seatwork conditions.” DuPaul, Ervin, Hook, and McGoey (1998, p. 560) articulate that “class wide peer tutoring in mathematics, reading, or spelling can be used to enhance task engagement and test performance for all students, not just those with ADHD”. The amalgamation of academic intervention and self-regulation strategies could assist achievement of academic skills gains beyond teacher-, computer-, or peer-mediated interventions, even though this idea needs to be confirmed, empirically (Kendall, 2008). Moreover, with the current acceleration in the advancement of technology, there are increasingly many novel technological devices, systems and programmes available to assist learners affected with ADHD.

2.12.2. Behavioral Interventions

Behavioural interventions for ADHD learners comprise of *antecedent* and *consequence-based* approaches (Kendall, 2008). Barkley (2006, p.55) states that “reduced delayed responding to the environment is the presumed a fundamental deficit underlying ADHD.” Behavioural

interventions include the modification of an environment so that it is conducive for learners affected with ADHD.

2.12.2.1. Antecedent approach

There are many antecedent inventions that are available which may eliminate inattentiveness and unruly behaviours from manifesting. Antecedents can be defined as occurrences that precede and trigger an outburst of a specific behaviour (Gaastra, Groen, Tucha, & Tucha, 2016; Harrison, Soares, Rudzinski, & Johnson, 2019).

2.12.2.1.1. Classroom rules

According to DuPaul and Weyandt (2006), teachers may review classroom rules to accommodate learners with ADHD. Rules should be limited but comprehensive and expressed in a positive way, which must be posted clearly, for all learners to perceive. Additionally, rules ought to be unambiguously expounded on at the start and regularly throughout the school year, if possible, on a daily or weekly basis as a reinforcement strategy. Most importantly, teachers should regularly praise and reward learners who are adhering to the classroom rules and have these rules placed in closer proximity to ADHD learner/s (Pffifner, Barkley, & DuPaul, 2006).

2.12.2.1.2. Differentiated assessment

DuPaul and Stoner (2003) suggest that teachers should decrease task requirements by changing the assessment tasks. Changes could include the length and content of the task. By reducing the length of an assessment task to accommodate for learners' limited attention spans, may result in completion of assessment tasks and enhanced behaviour. The effective strategy ought to be accompanied by teacher praise, contingent on task completion. While ADHD learners may show success with the differentiated assessments, the length of assignments can be gradually increased thereby shaping task-related behavior to match classroom norms (Kendall, 2008)

2.12.2.1.3. Choice making

Another example of an antecedent-based approach is to give learners limited choices when given class assessments. According to Kendall (2008, p. 87), "choice-making interventions allow learners to choose among two or more concurrently presented options (e.g., assignments

to complete, sequence of steps within an assignment, or partners for assigned activities).” By ADHD learners having these options, the outcomes achieved ought to be similar. For instance, Kendall (2008) provides reason for this by stating that learners are given the opportunity to select an assessment from a menu of possible assessments, all of which containing the same specific academic skill. Furthermore, Dunlap et al. (1994) explored the effects of choice-making for a few learners with disruptive behavior disorders and ADHD. Dunlap et al. (1994, p. 506) concluded that “when students were provided with assignment choices, they showed higher rates of task engagement and lower frequency of disruptive behavior relative to class sessions when teachers chose the specific assignments.”

2.12.2.2. Consequence-based approach

According to Kendall (2008), this approach requires revising environmental events following a specific behaviour to maintain or change the frequency of that behaviour. DuPaul and Weyandt (2006, p. 170) present that “numerous consequence-based approaches have been analyzed for ADHD learners containing contingent positive reinforcement, response cost, and self-management interventions.”

2.12.2.2.1. Contingent positive reinforcement

The contingent positive reinforcement, which involves teacher praise or token reinforcement, is seen as a common behavioral intervention for learners affected with ADHD (DuPaul & Stoner, 2003). Through this practice, learners will be praised, receive an award or token when they exhibit specific target behaviors (e.g., completion of tasks). Teachers may also provide tokens or rewards to these learners for good behavior, adhering to instructions or simply sitting at their desk.

DuPaul and Stoner (2003) and Pfiffner et al. (2006) discuss the numerous procedures that should accompany the reinforcement-based approach with ADHD learners. Firstly, reinforcement ought to be given as often as possible, where, if ADHD learners face trouble exhibiting consistent behaviour in circumstances, then partial reward ought to be offered. Secondly, instead of speculating that a just any reward will be motivating for a specific learner, rewards must be personalised dependent on the learner’s preferences and interests. Lastly, reinforcement should be given to the learner immediately after the occurrence of a target or achieved behaviour. This is seen as *response cost*, which serves as a consequence-based intervention, whereby rewards are taken away if there is disruptive or off-task behaviour.

Moreover, other studies (DuPaul, Guevremont, & Barkley, 1992, p. 220) have “established significant enhancements in task-related attention, as well as efficiency and accurateness of classwork, when the grouping of reward or token reinforcement as well as response cost is practiced.”

2.13. Chapter conclusion

This chapter reviewed past and present literature on ADHD. Evidently, there is a richness of data regarding literature on ADHD, concerning diagnosis, treatment, and etiology. However, by the review of literature, there appears to be a scarcity of research on teachers’ understanding of ADHD in public primary mainstream classrooms. The next chapter presents the theoretical approach that underpins this study.

CHAPTER THREE

THEORETICAL FRAMEWORK

3.1. Introduction

The previous chapter discussed literature of current findings on teachers' understandings of ADHD in public primary mainstream classrooms. Moreover, it covered insights on ADHD which included its origin, diagnosis, etiology, epidemiology, factors, controversies, manifestations within the classroom and interventions. This chapter discusses and presents the theoretical framework of the study.

The *Barkley's Theory of ADHD* is cited as a leading theory which provides profound insights on how ADHD should be understood (Bailey, 2000; Berlin et al., 2004; Fischer, Barkley, Smallish & Fletcher, 2005; Meaux, 2000; Nicpon, Wodrich & Robinson Kurpius, 2004 & Purdie et al., 2002). This theory, recognised as a hybrid theory, projected that the deficit in behavioural inhibition that characterises ADHD learners, reduces the effective operation of four executive functions: "(1) working memory; (2) internalisation of speech; (3) self-regulation of affect, motivation and arousal; and (4) reconstitution, that sub-serve self-control and goal-directed motor behaviour" (Quay & Hogan, 1999 & Berlin et al., 2004, p. 1119). Moreover, since Barkley's theory is broadly documented as a noteworthy advance in our understanding about ADHD that supports a burgeoning archive on the disorder, it may be seen beneficial to expand teachers' understanding on ADHD in public primary mainstream classrooms. For this reason, I have chosen this old yet significant theory as the underlying framework to support my research. Moreover, this theory served as a lens to teachers as it provided an understanding of the manifestation of ADHD in the classroom.

3.2. Barkley's Theory of ADHD

The model of ADHD presented on the next page (Figure 1), characterises *behavioural inhibition* as the leading function, upon which four other executive functions are reliant for their own operative execution. According to Barkley (1997, p. 65) "the four executive functions provide for self-regulation, bringing behavior progressively more under the control of time and the influence of future over immediate consequences." In so stating, the collaboration of these executive functions ensures that there is effective adaptive functioning toward the social future, specifically ADHD learners within classrooms.

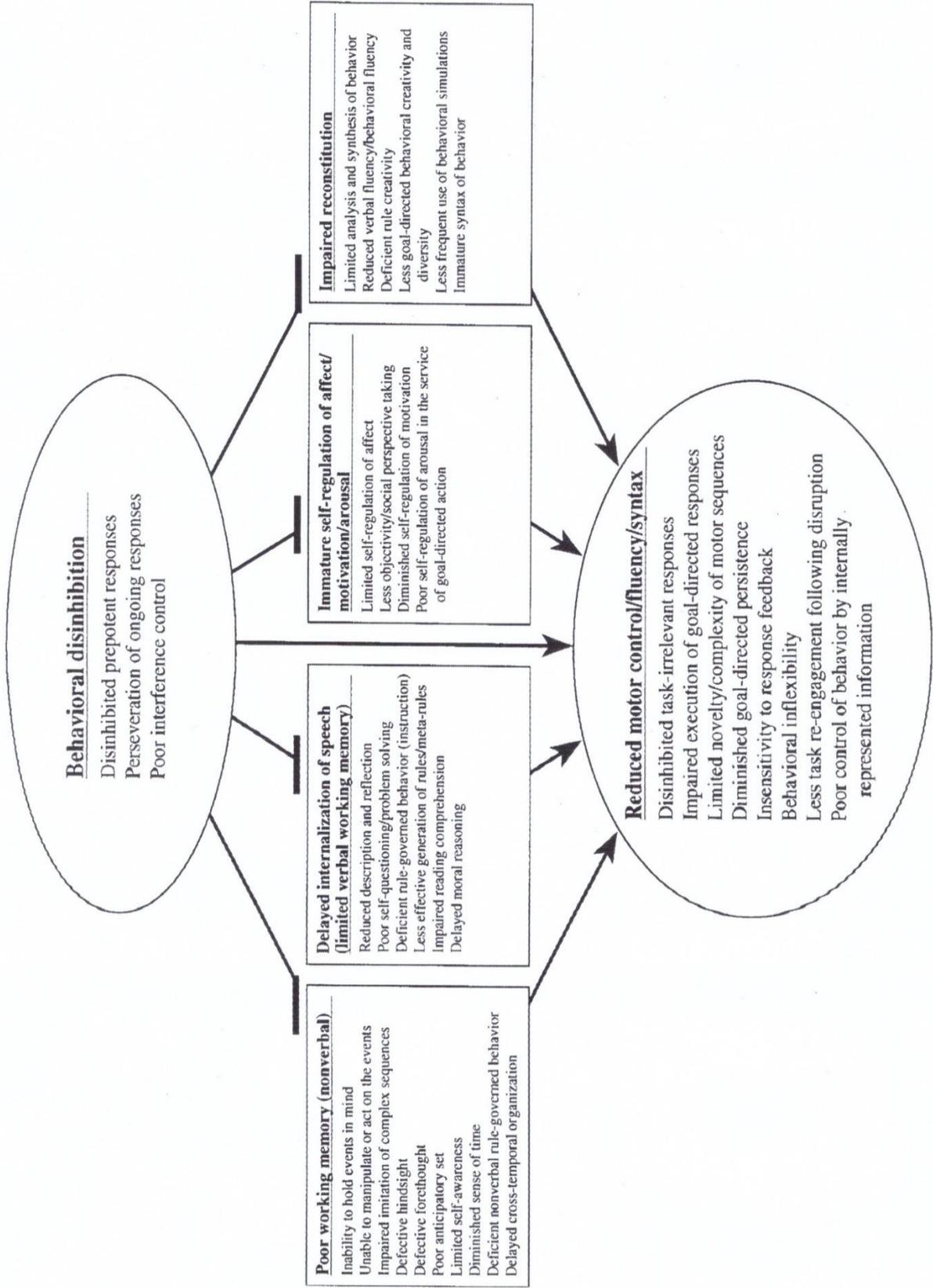


Figure 3.1 Diagram illustrating the complete hybrid model of executive functions, Barkley (1997b)

3.3. Understanding Barkley's model of ADHD

Barkley's theory conveys that behavioral disinhibition allows for the effective performance of the four executive abilities, namely: working memory; internalisation of speech; self-regulation of affect-motivation; arousal; and reconstitution (see above, Figure 1). Barkley (1997) describes that these four executive functions are secondary to behavioural disinhibition, with behavioural disinhibition being primary. Barkley's conceptualisation of disinhibition describes three interconnected processes. These processes include "(a) inhibition of the initial prepotent response to an event, (b) stopping of ongoing responses, which thereby permits a delay in the decision to respond; and (c) the protection of this period of delay and the self-directed response that occurs within it from disruption by competing events and responses (interference control)" (Barkley, 1997, p. 65).

According to Barkley (1990), ADHD impacts the executive functions, since the initial act of self-regulation is the inhibition of reactions. As mentioned before, the four executive functions are deemed to be distinct neuropsychological structures, secondary to the inhibition system. Barkley (1997, p.70) expresses that "the executive processes included in his model do not have a contributing correlation with inhibition; nonetheless, inhibition needs to take place so that working memory, self-regulation, internalization [sic] of speech and reconstitution may occur."

3.4. Assumptions of the model

There are many imperative assumptions regarding the understanding of the model when pertaining to ADHD. Firstly, as discussed before, behavioral disinhibition initiates in development, and implies that behavioural disinhibition is ahead of the four other executive functions, but possibly associated with the first function, namely the *nonverbal working memory*. Secondly, the executive functions arise at diverse times in development, may also have diverse developing courses, and are interactive. Thirdly, Barkley (1997, p. 68) expresses that "the barrier that ADHD forms in these executive functions is secondary to the primary deficit it creates in behavioral disinhibition (improve the disinhibition, and these executive functions should likewise improve)". Fourth, the deficit in behavioral disinhibition ascends mainly from genomic and neurodevelopmental roots rather than from social facets, even though its countenance is undoubtedly predisposed by social facets throughout development. Finally, the secondary deficiencies in self-regulation created by the primary deficiency in disinhibition feedback to add further to poor behavioral disinhibition, given that self-regulation contributes to the enhancement of self-restraint (Barkley, 1997).

3.5. Executive functions of Barkley's model of understating ADHD

3.5.1. Behavioural disinhibition

Schachar and Logan (1990, p. 710-720) discuss that “failure to inhibit (or disinhibition) in children might result in behaviours such as responding before the task is understood, answering before sufficient information is available, allowing attention to be captured by irrelevant stimuli (i.e. distractibility) or failing to correct obviously inappropriate responses”. The notion of disinhibition encompasses different types of behaviours that are often seen in ADHD learners. There remain numerous definitions of disinhibition as Sergeant *et al.* (2002) uncovered twelve definitions in their review. Nevertheless, disinhibition is frequently defined as suppressing a prepotent reaction. In stating such, absence in inhibition is closely related to attention and impulsivity.

With regards to developmental processes and inhibition, with age children, including those with ADHD, are able improve their behaviour. However, according to Brodeur and Pond (2001), ADHD learners continue to lag behind learners who aren't affected by ADHD in the development of inhibition. Schachar and Logan (1990, p. 710-720) examined “differences in both children and adults on an inhibition task and findings showed that when contrasting the ADHD group to normal controls, the ADHD group inhibited fewer responses than did the normal controls; differences between the children with ADHD and those with other clinical diagnoses were not significant suggesting the stop task may lack specificity.”

3.5.2. Poor Working Memory (non-verbal)

Working memory is expressed as the ability to grasp an event in one's mind and to utilise it to regulate a response. According to Berlin *et al.* (2004) working memory incorporates both *verbal* and *non-verbal* responses. Barkley (1994, p.71) states that “learners with ADHD have a weakened sense of retrospection, forethought and self-consciousness which ascends from working memory.” Being able to represent events in their correct chronological order is regarded as a function of working memory. However, this is a challenge and is regarded as problematic in ADHD learners. Consequently, ADHD learners find themselves having challenges in obtaining new information and recollecting it in the correct chronological sequence. Therefore, according to Barkley (1997, p. 74), “ADHD learners have trouble in anticipating future behaviour and how they respond may also be challenging.” Moreover, these ADHD learners experience challenges in their mental state of time as they frequently perceive

time to last much longer than perceived by learners who are not affected with ADHD. Therefore, Barkley (1997, p. 308) articulates that “the problem then for those with ADHD is not of knowing what to do, but one of doing what they know when it would be most adaptive to do so.”

Bronowski (1977, p. 106) articulates “during the delay in responding created by inhibition, humans activate and retain a mental representation of events in mind, typically using visual imagery and private audition.” Likewise, Diamond, (1990), Diamond, Cruttenden, & Niederman (1994), and Goldman-Rakic (1987), mentions that the usage of imagery may allow infants to successfully perform delayed response tasks to a limited degree. In so stating, the usage of imagery forms the basis for “nonverbal working memory”. This use of past images to prepare a current response is known as “retrospective function” or the “hindsight” of working memory (Bronowski, 1977; Fuster, 1997). Michon (1985, p. 491) states that “this allows for the retention of events in a temporal sequence that contributes to the “subjective estimation of time”. The temporal sequences may be used for recurrent pattern which may also foresee future events. According to Fuster (1997), the ability to foresee future events will allow the learner to prepare how to respond which is seen as an “anticipatory set”. Behavioural inhibition is closely linked to the inattentive symptom of ADHD. Therefore, “it is imperative to understand that this link is the critical role played by working memory in mind, one’s intentions to act, and to guide the construction and execution of complex goal-directed actions over time” (Fuster, 1997, p. 10).

Barkley’s model envisages that deficiencies in behavioural inhibition often lead to deficiencies in non-verbal working memory. These deficiencies include specific forms of forgetfulness, whereby, ADHD affected individuals find themselves forgetting to do things at certain times. ADHD affected individuals may also experience the deficiency of reduced ability to establish and perform actions in relation to time (for example, managing time) and abridged hindsight and forethought, resulting in a decrease in the formation of anticipatory action for future events. Therefore, Barkley (1997, p. 89), expresses that “the capacity for the cross-temporal organization of behavior in those with ADHD is diminished, disrupting the ability to string together complex chains of actions directed, over time, to a future goal.” Barkley further articulates that “the greater the degree to which time separates the components of the behavioral contingency (event, response, consequence), the more difficult the task will prove for those with ADHD, who cannot bind the contingency together across time so as to use it to govern their behaviour as well as others.”

Older research establishes some of the deficits in an ADHD affected individual, such as non-verbal working memory, timing, and forethought (Barkley, 1997b; Barkley, Edwards, et al., 2001; Barkley, Murphy, & Bush, 2001; Murphy et al., 2001). Yet the prediction from this theory has not been completely studied by others. This prediction explains that ADHD learners will be late in making references to time, past, and future in their verbal communications with others, as compared to those who aren't affected by ADHD. In so stating, the prediction within the poor working memory executive function of this model directs itself to the inattentive symptom of ADHD.

As discussed in Barkley's model, a "non-verbal working memory" is the initial aspect to be established (Berlin et al., 2004). A "non-working memory" may influence how teachers understand the learner with ADHD in classrooms as learners may have difficulties in the dispensation of new data, foreseeing their own future behaviour and understanding the passing of time. Teachers will possibly encounter an ADHD learner or learners with a weakened sense of working memory. Therefore, responding to this challenge becomes the role of the teacher. By exploring what teachers understand by this, and how they respond to this executive function may aid other teachers, and parents to understand how to respond to it within the classroom and at home.

3.5.3. Delayed internalisation of speech (limited verbal working memory)

According to Barkley (1997, p. 79) there is a delay in internalisation of speech or verbal working memory in individuals affected by ADHD. Therefore, learners with ADHD face challenges when using self-speech in self-regulation and they are less likely to devise problem-solving strategies. However, if strategies are devised, ADHD learners will find it difficult to apply the strategies effectively during the performances of tasks. Learners with ADHD struggle with reading comprehension because they "find it challenging to read silently to themselves, via internalized speech, which is held in mind to extract its semantic and inferential content" (Barkley, 1997, p. 80). Therefore, this struggle with reading silently and comprehending results has a negative impact on their learning.

Diaz and Berk (1992) express a captivating developmental process observed in children, referred to as the progressive internalisation or privatisation of speech. The ability to have speech allows for one to effectively communicate with others. Consequently, language develops. By the ages of three to five years, correct language is moderately used. Overt self-speech is then readily observed in preschool (grade R). By the ages of five to seven years,

speech becomes somewhat quieter and more brief, and moves from being more descriptive to being more instructive. Language then becomes reflective (self-directed description) and controlling over one's own behaviour. Thereafter, "reflective (self-directed) speech progresses from being public to being subvocal to finally being private, all over the course of perhaps 6 to 10 years, thereby giving rise to verbal thought" (Diaz & Berk, 1992; Kopp, 1982; Vygotsky, 1987).

Learners diagnosed with ADHD will have a delayed privatisation of speech. This results in a "more public speech (excessive talking), abridged verbal reflection before acting, abridged organized and rule oriented self-speech, a reduced influence of self-directed speech in controlling one's own behavior, and problems following the rules and instructions given by others" (Barkley, 1997, p. 80). Significant data has been gathered to acclaim this prediction of delayed internalisation of speech (Berk & Potts, 1991; Landau, Berk, & Mangione, 1996; Winsler, 1998; Winsler et al., 2000). Since private self-speech is a fundamental basis for verbal working memory, this area of cognitive activity ought to be diminished in ADHD learners as well.

Moreover, learners with ADHD often struggle with tasks such as backward digit span, mental arithmetic, paced auditory serial addition, paired-associate learning, and other tasks believed to reflect verbal working memory (Barkley, 1997b; Chang et al., 1999; Grodzinsky & Diamond, 1992; Kuntsi et al., 2001). Furthermore, children faced with learning disabilities may also have challenges with some of these tasks. Nevertheless, "ADHD may impair the actual internalization of speech, whereas reading disorders may reflect a normal internalization but of an impaired language ability" (Barkley, 1990, p. 546).

3.5.4. Immature self-regulation of affect, motivation, and arousal

According to Barkley (1997), psychological characterised types of data will have affective, motivational, appetitive, and even arousal states. ADHD learners are therefore not capable of controlling their negative outburst and they are not able to react positively when they are faced with anger, frustration, disappointment, sadness, anxiety, or boredom. Hence, ADHD learners are from time to time found to be hyperactive or impulsive for long periods in their development than other learners who do not have ADHD. Sadly, if ADHD learners possess problems in self-regulating emotions and motivations, this may impact their motivation to be active participants in the classroom.

Barkley (1997) discusses that the disinhibition of the initial prepotent response includes the inhibition of the initial emotional reaction that it may have prompted, where there is no implication that the learner will not experience emotions, rather that the behavioural response of emotion is impeded. This includes any motor behavior related to it. The impediment in reacting with an emotion will allow the learner to engage in self-regulated behaviour. This will result in a modification of a response to an event which will also include an emotional reaction. Keenan (2000, p. 420) therefore states that “this permits a moderating effect on the emotion being experienced subjectively by the learner, as well as on the learner’s eventual public expression of emotional behavior”. This internalisation and self-regulation of motivation allows the ADHD learner to encourage behaviour that is goal-directed and future-oriented behavior, in so doing this allows greater perseverance toward tasks and activities that will provide instant reinforcement. However, there might be substantial delayed reinforcement.

Encompassing ADHD within this model will lead to the following predictions. Those affected by ADHD ought to exhibit greater emotional expression in their responses to a specific event. They will also have less objectivity in responding to a specific event. Furthermore, they will possess lessened social perspective consciousness, as ADHD learners fails to delay their initial emotional reaction to consider those around them. Finally, they will have a weakened ability to fulfil goal-directed behaviour pertinent to their motivational state. In addition, ADHD affected individuals are reliant upon the ecological contingencies within an event or task to determine their motivation than do others (Barkley, 1997). Braaten and Rosen (2000), Maedgen and Carlson (2000) and Southam-Gerow and Kendall (2002) report that ADHD affected individuals possess problems with emotional regulation, where the reason for that could be facets of comorbid oppositional defiant disorder (Melnick & Hinshaw, 2000)

3.5.5. Impaired reconstitution

Barkley notes that “Reconstitution involves the analysis and synthesis of internally represented information and the behavioural structures associated with that information” (1997, p. 82). ADHD learners have challenges with behaviour when they are expected to abide by rules. For this reason, the usage of individual visual imagery and one on one communication to psychologically represent objects, tasks and expected behaviour will allow the ADHD learner to recombine cognitively, rather than physically through inappropriate behaviour. The delay in reacting to an event will allow the learner to retain the event in their mind. This will allow the ADHD learner to process more information about the event and to prepare an appropriate

response. Moreover, internal imagery and speech allows for analysis and fair synthesis of an event.

ADHD within this model foresees a reduced use of analysis and synthesis in the development of both verbal and non-verbal responses to specific events. Moreover, the ability to psychologically envisage, manipulate, and then create multiple responses to accomplish goal-directed behavior is reduced. Additionally, to select an appropriate response from the multiple responses envisaged, manipulated, and created becomes challenging for an ADHD learner or individual. Barkley (1997) discusses that the impairment in reconstitution will manifest daily. This will influence the ADHD learner's ability to fluently speak when they are required to be vocal rapidly, accurately, and efficiently. Moreover, the impaired reconstitution will influence the ability of ADHD learners to accomplish the requirements of a task or a specific goal. Furthermore, impaired reconstitution will negatively impact the ADHD learner when visual information must be retained in their mind and manipulated to create different situations aiding to problem solving skills. Barkley (1997), Clark et al. (2000), Klorman et al. (1999), Nigg et al. (2002), and Oosterlaan et al. (1998) collectively agree that the indication for a deficiency in verbal and non-verbal fluency, planning, problem-solving, and strategy development more generally in ADHD learners is limited, but what is evident is reliable with the theory.

3.5.6. Reduced motor control/fluency/syntax

According to Barkley (1997, p. 83), "if the deficit in behavioral inhibition proposed in the current model is housed within the brain's motor or output system, then its effects should also be evident in the planning and execution of motor actions." In this regard, complex fine and gross motor actions necessitate inhibition to prevent the introduction of movements positioned in neural regions nearby those being triggered. Inhibition offers an expanding "functional pruning of the motor system such that only those actions required to accomplish the task are initiated by the individual" (Harvey & Reidn, 1997, p. 190).

The model specifies that individuals with ADHD ought to exhibit more complexities with the expansion of motor coordination. Moreover, these complexities will encompass "the planning and execution of complex, lengthy, and novel chains of goal-directed responses" (Barkley, 1997, p. 84). Moreover, Barkley (1997), Harvey and Reid (1997), and Kadesjo and Gillberg (2001) state that there remains considerable evidence relating to complications in motor development and motor execution in ADHD affected individuals.

3.6. Chapter conclusion

This chapter has presented an old, yet significant theoretical framework for teachers in this instance, to understand how ADHD ought to be understood. Barkley's theory of understanding ADHD provides a powerful and insightful framework on how one can truly understand ADHD within the classroom context. Barkley's complete hybrid model of executive functions is closely linked to the symptoms of ADHD, which may provide teachers with a profound understanding of ADHD. It discusses how behavioural disinhibition is primary and the four executive functions are secondary. The next chapter will provide a complete account of the research methodology of this study which includes the method of data production, the selection of participants and the ethical principles followed by the researcher, where necessary aspects of non-maleficence and beneficence and limitations of this study receive attention.

CHAPTER FOUR

RESEARCH METHODOLOGY

4.1. Introduction

The previous chapter presented a significant theoretical framework for this study. This chapter covers a complete account of the research methodology, which includes the method of data collection, the selection of participants and the ethical principles followed by the researcher. Aspects of non-maleficence, beneficence and limitations of this study, will be discussed within this chapter.

With the focus of the study being teachers' understanding of ADHD in public primary mainstream classrooms, it appeared suitable for me to utilise the methodological approach of narrative inquiry. One of the reasons for the utilisation of such an approach was the fact that it allowed, through teachers' narratives, to explore their understandings of ADHD within the public primary mainstream classrooms. This then enabled me to fathom what, how and why these teachers understand ADHD. Therefore, the research design, instruments, and techniques used in the data analysis, as well as relevant methodological constraints and ethical considerations, will be discussed. Additionally, I will outline my research methodology and present my data collection approaches.

4.2. Paradigm

This study was underpinned by the interpretive paradigm, being grounded in the world of lived experiences. Thanh and Thanh note that "Specifically, interpretivism supported scholars explore their world by interpreting the understanding of individuals" (2015, p. 24). Interpretivism exists as an approach to interpreting the world and how the world should be interpreted and studied. In research within social sciences, including in education research, an interpretivist ontological position is embraced. According to Chowdhury (2019, p. 101), this means "reality is not fixed, as it accepts that reality can be perceived in multiple ways, and the human subjectivity and opinions are of paramount importance, without which we only get a partial and therefore, incomplete view of reality."

Additionally, the interpretivist epistemological position within this study, prompted moving beyond what was already apparent (Chowdhury, 2018b). Instead of separating myself, I became involved in creating meaning by interacting with participants through the data

collection methods. For the interpretivist, active interactions with participants and data collection methods provide insight as to how they construct their worldviews. Moreover, the axiology within this study will be fulfilled, whereby the inherent, often assumed values, and the moral and ethical positions that dictate how one conducts research, will be followed. Chowdhury (2019, p. 111) states that, “the bases on which one decides what is meaningful or not, relevant or irrelevant, as well as the value of the outcome of our research, are axiological considerations.”

4.3. A qualitative approach

Intended for qualitative research, data is collected more in a verbal and visual method as opposed to quantitative approach in a numeric method. Silverman (2010) notes that “Qualitative research is subjective; it is in-depth, exploratory, interpretive and open-ended in nature; studies are conducted on entities in their natural settings as opposed to quantitative studies, which are conducted in controlled settings” (p. 56). This approach is advantageous as it allows for the use of a variation of research methods to collect and generate data. Conducting research in qualitative settings is beneficial to both the researcher and participant as research is conducted in natural contexts which makes participants feel content to participate in the study with a clear mind.

Moreover, this study employed a qualitative approach where it serves to explore the nature of specific situations, processes, relationships and of people. In this instance, it is concerned with teachers’ understanding of ADHD. Creswell notes that “A qualitative study is an investigative process whereby the researcher gradually makes sense of social phenomena through contrasting, comparing, replicating, cataloguing, and classifying the object under study” (2011, p. 38). Babbie and Mouton (2006, pp. 274-278) state that a qualitative approach is concerned with the examining and interpretation of observations, and Lopes notes that “Qualitative research, from the interpretive inquiry position seeks to understand the meaning of experiences, actions and events as interpreted through the participants and the researcher, paying attention to the intricacies of behaviour and meaning in the context of where it occurs” (2008, p. 15). According to Clandinin and Connelly (2000), interpretivism and narrative design aid one another in gaining insight into the personal and social experiences of teachers in their interaction with others. Likewise, the qualitative approach was used so that I, as the researcher, could explore through collages, reflective journals and interviews, how everyday existence is experienced and how meaning is understood.

4.4. Sampling

Purposive sampling was selected for this study, where six educators were selected as participants. Teddlie and Yu “Purposive sampling techniques are primarily used in qualitative studies and may be defined as selecting units (e.g., individuals, groups of individuals, institutions) based on specific purposes associated with answering a research study’s questions” (2007, p. 77). Purposive sampling is used in this research to highlight features of a group that are of interest, in a way that will allow for the answering of the research questions in this study. Moreover, “it involved identifying and selecting individuals or groups of individuals that are especially knowledgeable about or experienced with a phenomenon of interest” (Cresswell & Plano Clark, 2011, p.50). The participants were teachers who have experienced or are experiencing ADHD learners in their classroom. Thus, I utilised purposive sampling to include teachers who have experienced, or are experiencing ADHD learners in their classroom, as my specific target group in this research study.

4.5. Narrative research

This study employed a narrative research methodological approach. Creswell (2002, p.150) states that “the narrative research design has been implemented in educational studies that have highlighted educator reflection, educator knowledge (what they know and what they do not know, how they think professionally and how they make decisions in the classroom) and voicing educator experiences.” Narrative inquiry is a way of understanding and inquiring into experience through “collaboration between researcher and participants, over time, in a place or series of places, and in social interaction with milieus” (Clandinin & Connelly, 2000, p. 20). The study provides a way for teachers to voice their understandings of ADHD in their classrooms. The behaviour that is manifested by ADHD learners, can have an impact on the teaching and learning that takes place in the classroom. Therefore, this behaviour can be expressed as an educational problem. Narrative researchers, thus, “seek to explore an educational research problem, by understanding the experiences” (Creswell, 2002, p.150).

4.6. Research design

A case study was used for this research, as it is a method of generating data through different tools and creating narratives that are understandable and clear to the reader, the participants, the examiner, and other interested parties. According to Rule and John (2015), a case study is a systematic and in-depth study of one case, in its context. Thomas (2011, p. 512), created the

following definition of a case study, “founded on a critical review that pursued cohesions of numerous case study definitions: Case study is an in-depth exploration from multiple perspectives of the complexity and uniqueness of a particular project, policy, institution, program or system in ‘real life’”. Furthermore, the author emphasises that a case study should not be viewed as a method in and of itself. Rather, it is a design frame that may integrate several methods. Stake (2005, p. 444) affirms this by stating that “a case study is not a methodological choice, but rather a choice of what is to be studied – by whatever methods we choose to study the case”. In so doing, “we can study it analytically, holistically, hermeneutically, culturally, and by mixed methods, but we concentrate, at least for the time being, on the case” (Stake, 2005, p. 443). Similarly, Flyvbjerg (2011, p.305) notes “if we decide to use a case study in our research, this does not mean the selection of a method, but rather a selection of what will be explored.” The study concerns the case of the understandings enacted by teachers, regarding ADHD in mainstream classrooms. In addition, Baxter and Jack (2008) express that a case study has the potential to deal with simple through complex situations, as it enables the researcher to answer the “how” and “why” type questions, while taking into consideration how a phenomenon is influenced by the context within which it is situated. Basically, for the novice researcher, a case study is a good opportunity to gain incredible understanding into a case.

4.7. Data production methods:

4.7.1. Collage:

This data production method addressed the following: (see Appendix E)

First research question:	First objective of this study:
What are the teachers’ current understanding of ADHD in public primary mainstream classrooms?	To explore what is the teachers’ current understanding of ADHD in public primary mainstream classrooms.

Visual method is a form of qualitative research that utilises documented images, media, and drawings to stimulate information or data. Literat (2013, p. 86) states that by “using visual narrative inquiry, participants are given expressive channels to voice their inner stories, as well as an active and empowering stake in the research study”. Within the art-making community, some will argue that the art or visual text speaks for itself and that the drawing, collage, or performance exists precisely because the idea is not easily expressed in words. These visual methods also accommodate oral data and in return develop creative analytical skills within

participants. When using collages contemplatively, the researcher focuses on a predicament and questions the participants to select pictures that symbolically reflect facets of their thinking. Wood and Mayaba (2015, p. 2) note that a collage is a piece of art created by sticking various materials such as pictures and words on paper or fabric to exhibit a message, story or understanding.

The participants use pictures and words from magazines, the internet, and newspapers to portray several of their understandings of ADHD. As Kisber and Poldma (2010, p. 50) asserts, “a collage process breaks away from the linearity of written thoughts by working first from feelings to the ideas they evoke.” Participants were given five days to collect the necessary data to create their collage. Once the collage was completed, I scheduled an interview session so that participants could explain their collages. The interviews were audio recorded and are transcribed verbatim.

4.7.2 Reflective journals

This data production method addressed the following: (see appendix F)

Second research question:	Second objective of this study:
Why do teachers enact these current understandings of ADHD in public primary mainstream classrooms in the way that they do?	To explore why teachers have enacted these understandings of ADHD in public primary mainstream classrooms in the way that they do.

Reflective journals were utilised as my second data collection tool to obtain data from teachers. The benefits of using reflective journal are numerous (Bourner, 2003; Levett-Jones, 2007; McGuinness & Brien, 2007; Ong, 2004). Dunlap notes that “The use of reflective journals offers an opportunity for researchers to hear the voice of teachers through the chance given to them to express the thoughts and changes they experience as a part of their learning experience” (2006, p. 22). I provided a book to all participants to reflect on their understanding of ADHD, specifically how they have enacted their understandings of it. This served as a type of diary where the participants made regular entries during prescribed time frames. In these entries, participants reflected on how they have enacted understandings of ADHD as per the second research question and objective of this study. Participants were given a time frame of two weeks to complete their reflections. Within these reflections I aimed to prompt my participants to tell

a story of their experiences of teaching ADHD learners which may influence their understanding of ADHD learners.

4.7.3. Interviews

This data production method addressed the following: (see appendix G)

Third research question:	Third objective of this study:
How can teachers acquire additional information of ADHD in public mainstream classrooms?	To identify how teachers can acquire additional information of ADHD in public mainstream classrooms.

Unstructured interviews were used as the third data collection method within this study. A social setting of research data.” According to Bertram and Christiansen (2014), in an instructed interview interview is an organised way of communicating and listening to individuals. Moreover, it allows a researcher to collect data from individuals through conversations. Interviewing is a way to collect data as well as to gain knowledge from individuals. Kvale (1996, p. 14) regarded interviews as “an interchange of views between two or more people on a topic of mutual interest, sees the centrality of human interaction for knowledge production, and emphasizes the, the researcher may simply introduce the topic or main research question, then let the respondent answer in his or her preferred way. This data collection method allowed me to address the third research question and objective of this study.

4.8. Trustworthiness:

As Cohen, Manion, Morrison (2011) express, trustworthiness in qualitative research is fundamental, and without it, research findings can be deemed worthless. I audio recorded and transcribed data to guarantee trustworthiness of the data. Aspects of emotional attachment to the participants may also encumber the trustworthiness and impact negatively on the research. Therefore, professionalism and relevance was maintained with the participants. Bertram & Christiansen note that “In interpretivist research, it is important that the research is credible: it must reflect participant reality” (2014, p. 188). In so stating, the credibility of this research study in both data collection and analysis, was done using an audio-recorder to record the discussion on the collages verbatim. Consequently, transcription was able to be more precise.

4.9. Ethical considerations:

4.9.1. Autonomy

Ethical issues will be measured in this research. Ethics concerns itself with behaviour that is considered right or wrong. Bertram and Christiansen argue that “Consent means that the participants agree to take part in the study” (2014, p. 66). As the researcher I had obtained ethical clearance from the higher degrees department at the University of KwaZulu-Natal (*see appendix C*). Moreover, I obtained permission from the KwaZulu-Natal Department of Education and the principal of the school to use teachers as participants (see appendices A, B and D). Additionally, participants were notified beforehand about what the study entailed, and what the intentions and purpose were (see appendix B). Participants were issued with a written consent form, which they signed, affirming that they agreed to participate in this study. It is also imperative to protect the identity of the participants. Hence, in this study, participants were given pseudonyms, as was the school, the area in which the school is situated, and any organisations mentioned.

4.9.2. Non-maleficence

Bertram and Christiansen note that “Non-maleficence means do no harm” (2014, p. 66). The participants in this research study were guaranteed of confidentiality of the information that they provided to this research and the identities of the participants are protected. The participants were also made sure how the information that they provided would be made public. In addition, participants had the option to withdraw from the research study at any time.

4.9.3. Beneficence

Bertram and Christiansen note that “Beneficence means should “be of benefit” to the research participants or other researchers” (2014, p. 67). This research aimed to be beneficial to the participants and other researchers in the field of educational psychology. Participants had contributed to the existing knowledge of ADHD in mainstream classrooms as well as provided types and approaches for principals and teachers to embrace ADHD learners within the public mainstream classroom.

4.10. Chapter conclusion

This chapter provided a complete account of the research methodology of this study which included the way in which, data was generated, the selection of participants. Furthermore, the ethical principles to be followed by the researcher was discussed. Aspects of non-maleficence, beneficence and limitations of this study were discussed. The next chapter presents the research findings in the arrangement of themes identified by the researcher, during the analysis process.

CHAPTER 5

DATA PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

5.1. Introduction

The previous chapter discussed the methodological framework for this research study. The purpose of this study is to explore teacher's understanding of ADHD learners, their experiences, and methods on how to gain a better understanding of ADHD, in mainstream public primary school classrooms. Through this exploration, it provides insights into addressing the educational difficulties, considering the challenges faced by ADHD learners; moreover, to create awareness for the participating schools as to types of approaches and strategies, that will assist teachers in expanding their knowledge on ADHD, which will aid in their professional growth. This will also assist in eliminating any misconceptions of ill-disciplined learners. The research questions for this study is: (1) What are the teachers' current understanding of ADHD in public primary mainstream classrooms? (2) Why do teachers enact these current understandings of ADHD in public primary mainstream classrooms, in the way that they do? and (3) How can teachers' understandings of ADHD in public primary mainstream classrooms, be altered?

This chapter presents data generated from participants using collages, reflective journals, and interviews. Data production methods that required audio recordings were transcribed verbatim, and will be presented. Visual and textual data gained from collages and reflective journals is presented. Furthermore, themes developed through the analysis of data and a discussion of the findings are presented, along with a narrative developed from the responses of participants.

5.2. Pseudonyms and biographical data of participants

According to Room (2010) a pseudonym is given to a person or group for a particular purpose, which can differ from their first or true name, to protect their identity.

Participant	Pseudonym	Qualification	Years of teaching experience
1	Samo	B.Ed.	4
2	Ricco	B.A., B.Ed. (Hons), UPHE, PGCE	33
3	Kally	B.Sc., PGCE	13
4	Chad	J/S Ed Diploma, B.A. degree	35
5	Tom	B.A. psych (Hons), PGCE	11
6	Sandy	B. A., H.de	25

(Figure 4.1)

5.3. Data analysis: Themes

Presented below are three themes that emerged from the data production tools.

Themes	Questions / prompts from the production tools
Theme 1: The contemporary understanding of ADHD.	<ul style="list-style-type: none"> • Please explain the meaning of your collage. • Where have you included the symptoms of ADHD? • Where have you included diagnosis and treatment of ADHD? • If you had to sum up your understanding of ADHD by just one picture or word, which would that be?

	<ul style="list-style-type: none"> • Which parts of the collage represents you as being a teacher of an ADHD learner/s? • Whilst creating your collage, were there anything that added to your understanding of ADHD learners?
<p>Theme 2: The experiences that influence the understanding of ADHD.</p>	<ul style="list-style-type: none"> • Reflect on your experiences of teaching ADHD in a public primary mainstream classroom to determine why you have enacted these understandings in the way that you do. • Reflect on how you received insights of ADHD? • Reflect on your knowledge of the symptoms of ADHD. How did you gain this knowledge? • Reflect on the treatment of ADHD. How did you gain this knowledge? • Reflect on some of the challenges that you are faced with having an ADHD learner in your class? • Reflect on the emotions felt when teaching ADHD learners in your public mainstream classroom. • Reflect how you accommodate ADHD learners academically and physically within the public primary mainstream classroom.
<p>Theme 3: Acquiring a better understanding of ADHD.</p>	<ol style="list-style-type: none"> 1. What do you think would aid teachers in gaining a better and accurate understanding of ADHD? 2. Are you knowledgeable about the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM 5)?

	<p>If yes, explain how you have developed an understanding of the tool.</p> <p>If no, explain ways in which you could gain knowledge about the tool.</p> <ol style="list-style-type: none"> 3. Do you think that there is enough support offered to teachers regarding ADHD? Explain. 4. Suggest additional ways in which we can assist teachers to develop an understanding of ADHD and ways in which teachers can embrace these learners after they have developed a better understanding of ADHD. 5. From being a participant in this study, what would you now do differently, when teaching ADHD learners?
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(Figure 4.2)

5.4. Presentation of data

5.4.1. Collage- Theme 1: The contemporary understanding of ADHD.

This data production method addressed the following.

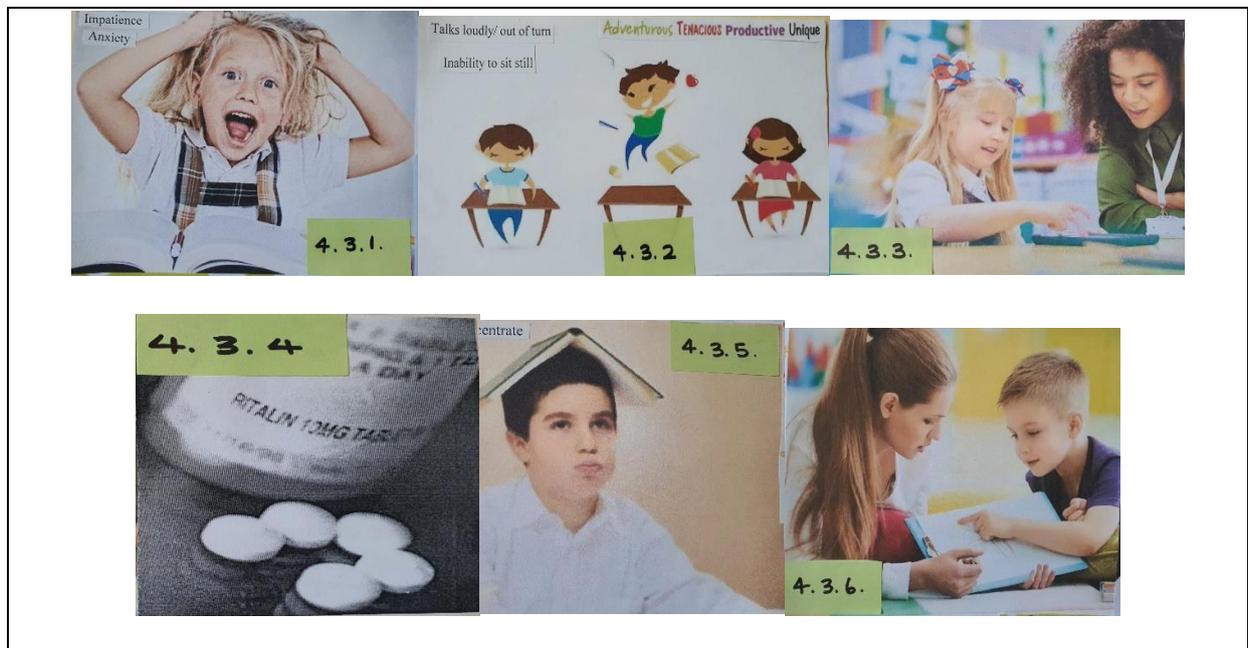
First research question:	First objective of this study:
What are the teachers' current understanding of ADHD in public primary mainstream classrooms?	To explore what is the teachers' current understanding of ADHD in public primary mainstream classrooms.

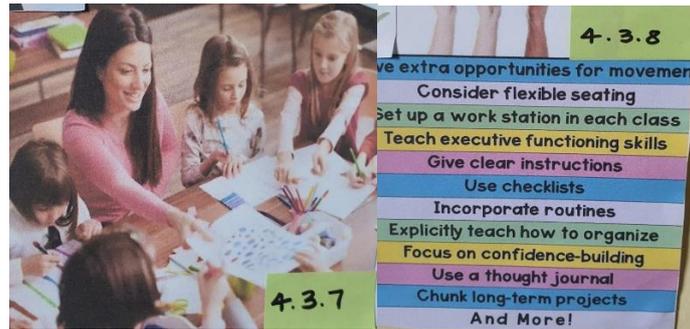
Participants were required to put together a series of images that highlighted their understanding of ADHD, in their mainstream classroom. Once the collages were completed, I had a semi-structured interview with each participant to discuss their collages. Presented below, are the responses from the participants (transcribed verbatim).

5.4.1.1. Participant 1: Samo



Figure 4.3 Picture of collage created by participant 1: Samo





Figures 4.3.1 – 4.3.8 Specific pictures referred to by participant.

Researcher: Please explain the meaning of your collage.

Samo: *“Each picture represents characteristics, symptoms, treatment, strengths and ways in which ADHD learners, can be supported and accommodated for. This collage displays how children with ADHD, have as much strength traits, as a child who is not ADHD.”*

Researcher: Where have you included the symptoms of ADHD?

Samo: *“I have included the symptoms of ADHD at the start/top of the collage. There is a picture that shows the different characteristics according to organisation, attention, hyperactivity, and concentration. It displays a girl who is academically weak, showing her anxiety and struggle (image 4.3.1), boys that are easily distracted and spaced out (image 4.3.5) and it displays the hyperactivity of a learner (image 4.3.2,) within the classroom. Symptoms have also been placed as words, on certain pictures.”*

Researcher: Where have you included diagnosis and treatment of ADHD?

Samo: *“I have displayed the medicinal treatment such as Ritalin and I have also included a picture showing individual therapy. I have also included strategies that can be used in the classroom, at home and even some of which the learner can do.”*

Researcher: If you had to sum up your understanding of ADHD by just one picture or word, which would that be?

Samo: *“The word unique would be the word I would use. Each learner is unique in their needs and character.”*

Researcher: Which parts of the collage represents you, as being a teacher of an ADHD learner/s?

Samo: *“In my classroom, I accommodate for the diverse needs, allowing my learners to be comfortable enough with me. I have represented this by displaying the teacher giving the learner individual attention (images 4.3.3 and 4.3.6), the teacher and learners doing group work (image 4.3.7), I allow for my learners to be creative in class, and lastly the last picture (image 4.3.8), which shows most of the ways in which I accommodate for learners in my classroom. These include: have extra opportunities for movement; consider flexible seating; set up a work station in each class; teach executive function skills; give clear instructions; use checklists; incorporate routine; explicitly teach how to organise; focus on confidence-building; use a thought journal; check long-term project; and more.”*

Researcher: **Whilst creating your collage, was there anything that added to your understanding of ADHD learners?**

Samo: *“Yes. By doing this, I understand the different characteristics in ADHD learners. I realise that each learner is unique, and their needs differ from one another. Although there are many weak spots for these ADHD learners, there is as much strength, too.”*

The response received from Participant 1, Samo, concerning the understanding of ADHD, was received without ambiguity. The collage produced by Samo contained the two symptoms of ADHD, as well as some treatment options. However, Samo did not include her understanding of the diagnosis of the disorder. Samo appears to be a teacher who would do everything in her power to accommodate the diverse needs of ADHD learners within the mainstream classroom. This is evident through the display of images that contained the inclusion of ADHD learners. The analysis of Samo’s collage may prove that she has a good understanding of the symptoms, treatment options and accommodation of ADHD learners in the mainstream classroom. Since she did not include her diagnosis of ADHD in her collage, it can be assumed that she may not have a sound understanding of the diagnosis. Nevertheless, from creating the collage, she has

realised that there are different characteristics of ADHD, which need to be addressed differently.

5.4.1.2. Participant 2- Ricco



Figure 4.4 Picture of collage created by participant 2: Ricco.

Ricco created a collage that was divided into five sections. Each section was colour-coded with Ricco's understanding of ADHD. The participant presented a discussion based on the collage, which included five main ideas, namely: some symptoms of ADHD as shown on the top left section of the collage (Image 4.4.1); the diagnosis and treatment of ADHD as shown on the top right section of the collage (Image 4.4.2); being a teacher of ADHD learners as shown on the bottom left of the collages (Images 4.4.3); additional insights about ADHD, as shown on the bottom right of the collage (Image 4.4.4) and the meaning of the collage, as shown at the middle of the collage (Image 4.4.5).

SOME SYMPTOMS OF ADHD (Images 4.4.1, top left section)

- Has poor grades, although appears to be bright and articulate, always has difficulty completing written tasks.
- Often distracted easily.
- Displays inappropriate/impulsive behaviour - often behaves contrary to what has been requested, no matter how many times the request may be made.
- Parents who are often overwhelmed and do not understand the behaviour/deny that there might be anything wrong.
- Struggles to remember simple things.
- Negatively labelled by the other children/adults/teachers and sometimes singled out as the scapegoat. Can be the bully or the victim. Can feel ostracised at times as he/she can have difficulty with social skills and has difficulty making friends of own age. Conversely, can be very charismatic and well-liked by others.
- Displays frustration/apathy at his /her constant struggle with his/her schoolwork.

DIAGNOSIS AND TREATMENT (Images 4.4.2, top right section)

- The child presents with characteristics of distractedness, inattention, etc. and is sometimes referred to a health professional by the class educator or a pro- active parent will take the child.
- Some form of checklist and testing is administered
- The DSM 5 will be completed with information gained from teachers and parents.
- If ADHD is clearly indicated, child will be put on medication to help child to slow down and focus. There is much debate as to the side effects. Sometimes parents chose not to medicate.
- Often parents are advised by the health care professional on ways to assist the child daily, in conjunction with the medication that is administered.

THE MEANING OF MY COLLAGE- SUMMED UP IN THIS ONE PICTURE (Image 4.4.5)

There are lots of positives aspects about the child who has ADHD, even more than there are negative- he/she just needs to be given a chance.

TEACHER OF ADHD LEARNERS (Images 4.4.3, bottom left section)

When I teach

- I do as much one- on- one work with each child as possible, I find working side by side works well.
- I use concrete aids to assist these children as I know they learn best through a multi-sensory approach – they must have the opportunity to touch resources and to make sense of the concept.
- I recognise that since they struggle to read, questions should be read to them and they should be given all opportunities to answer orally, because they know the correct answer- they just cannot write it down.
- Try to keep in regular contact with parents - often explain to parents how they can assist their child. -parental help at home is imperative if a child is to make progress.
- Regularly research methods/ strategies to help my learners and improve my knowledge.

ADDITIONAL INSIGHTS (Images 4.4.4, bottom right section)

As a manager I have realised that:

- We need to offer our parents greater support with understanding the condition so that we can create a solid support structure for the child.
- Educators need greater development in their understanding- educator training is too rudimentary, and educators are often overwhelmed with feelings of helplessness, because they lack the understanding of the condition. More educators need to be champions for children with ADHD.
- The ADHD child needs to be viewed in a more holistic light.
- ADHD is a chronic medical condition, just like e.g. Diabetes, and therefore it needs to be treated as such. ADHD does not just go away - it has to be managed.

The response from participant 2 Ricco, was received unambiguously. Ricco created his collage and provided the researcher with a write up which clearly explains his understanding of ADHD. The first section (as labelled 4.4.1 on the collage) displays his understanding of the symptoms of ADHD, as well as the manner in which it is played out in his mainstream classroom. He comments on parents' perceptions of their children, regarding the symptoms of ADHD. The second section (as labelled 4.4.2 on the collage) provides insight into his understanding of the diagnosis and treatment of ADHD, which is aligned with the diagnosis procedure. The third section (as labelled 4.4.3 on the collage) provides his understanding of accommodating ADHD learners in the mainstream classroom, as well as the way in which he accommodates these learners. His understanding of the accommodation of ADHD learners is advantageous to the ADHD learner, as he practices inclusivity. The last section (as labelled 4.4.4 on the collage) provides additional ADHD, insight as per his understanding, which is viewed favourable for the ADHD learner. The analysis of Ricco's collages, provides a sound understanding of the disorder. It can be assumed that he has a comprehensive understanding of ADHD.

5.4.1.3. Participant 3- Kally

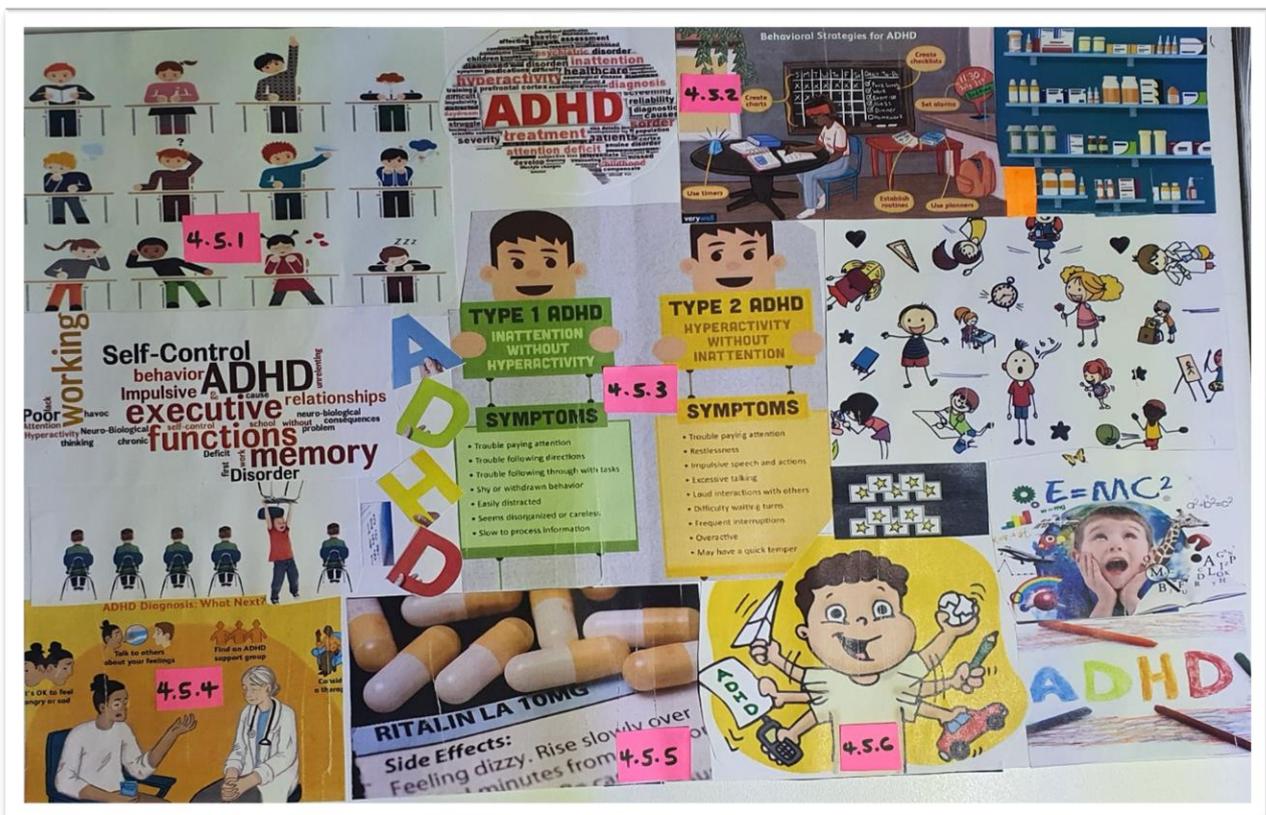


Figure 4.5 Picture of collage created by participant 3: Kally



Figures 4.5.1 – 4.5.6. Specific pictures referred to by participant.

Researcher: Please explain the meaning of your collage.

Kally: “My collage represents my understanding of ADHD. The centre picture (Image 4.5.3) illustrates the two types of ADHD, which is inattention without activity and hyperactivity without inattention. The picture (Image 4.5.5) that illustrates pills shows the treatment of ADHD, which is Ritalin.”

Researcher: Where have you included the symptoms of ADHD?

Kally: “I have used the center picture (image 4.5.3), which shows the symptoms of ADHD which is type 1 ADHD - inattention without hyperactivity and type 2 ADHD hyperactivity without inattention. The symptoms for type 1 ADHD are trouble paying attention, trouble following directions, trouble following through with task, shy or withdrawn behaviour, easily distracted, disorganised, or careless and slow to process information. The symptoms of Type 2 ADHD, are also troubling to pay attention, restlessness, impulsive speech and actions, excessive talking, loud interactions with others, difficulty waiting turns, frequent interruptions, overactive and may have a quick temper. Also, the picture on the top left corner (Image 4.5.1) shows the various systems of ADHD, which I have mentioned already, within the classroom.”

Researcher: Where have you included diagnosis and treatment of ADHD?

Kally: *“The picture on the bottom left corner (Image 4.5.4) depicts my understanding of how the diagnosis is done. The parent of the ADHD child is required to meet with a specialist to discuss assessment and treatment options. Also, the picture of the Ritalin pills (image 4.5.5), shows what is used to treat learners with ADHD.”*

Researcher: If you had to sum up your understanding of ADHD by just one picture or word, which would that be?

Kally: *“The picture of the little boy at the bottom of the page with six hands (Image 4.5.6). This just depicts how children with ADHD, have so many things running through their brain at the same time. Therefore, making it hard for them to focus on one concept at a time.”*

Researcher: Which parts of the collage represents you as being a teacher of an ADHD learner/s?

Kally: *“The picture on the top right says behavioural strategies for ADHD (Image 4.5.2). I use charts and checklists in my classroom, and we establish routines for the day, to help with behaviour modifications.”*

Researcher: Whilst creating your collage, was there anything that added to your understanding of ADHD learners?

Kally: *“Well, I feel that there are so many learners that show symptoms of ADHD and it is becoming the new norm at our school. Our curriculum needs to be adapted to allow for these kids to be able to cope with, or without medication. We need to bring in more behavioural modification techniques into the classroom.”*

Based on the collage created by participant 3 - Kally, it is evident that she portrays a reasonable amount of understanding of ADHD. She has included the correct symptoms of ADHD and the way in which it is played out, in her mainstream classroom. She also included a brief understanding of the diagnosis of ADHD. The treatment of ADHD included, only dealt with one type, which was medication. Kally portrays a sound understanding concerning the accommodation of ADHD learners in her mainstream classroom. She has also noted that ADHD is a new norm at her school, which requires an adjusted curriculum.

5.4.1.4. Participant 4- Chad



Figure 4.6 Picture of collage created by participant 4: Chad



Figures 4.6.1 – 4.6.7. Specific pictures referred to by participant.

Researcher: Please explain the meaning of your collage. (Each representation)

Chad: *“The collage that I created represents my understanding of ADHD and how it manifests in the classroom. ADHD is a brain disorder, so I have outlined my collage into a brain. It also depicts the symptoms of ADHD, which are impulsive, lack of attention and hyperactivity. My collage shows the behaviour of different learners with ADHD.”*

Researcher: Where have you included the symptoms of ADHD?

Chad: *“I have pasted the image of the boy showing hyperactive behaviour (image 4.6.1) and pictures of learners having difficulty trying to focus (images 4.6.2, 4.6.3., 4.6.4 and 4.6.8).”*

Researcher: Where have you included diagnosis and treatment of ADHD?

Chad: *“I have included the picture of Ritalin (Image 4.6.5) as a common medication used to treat ADHD learners. As an educator, one cannot or should not diagnose a learner with ADHD. Instead you should observe and prepare a report to attach to your referral to an educational psychologist.”*

Researcher: If you had to sum up your understanding of ADHD by just one picture or word, which would that be?

Chad: *“It would be the picture at the center (image 4.6.4) as it shows the emotions and what is really going on in the brain of a learner with ADHD.”*

Researcher: Which parts of the collage represents you as being a teacher of an ADHD learner/s?

Chad: *“Image 4.6.7 illustrates that my role as a teacher, is to assess every child’s needs and not to label a child as being naughty, disrespectful or attention seeking. I must observe my learners closely and be tolerant and patient with them.”*

Researcher: Whilst creating your collage, was there anything that added to your understanding of ADHD learners?

Chad: *“Whilst looking for pictures, I was surprised to find some that so closely mirrored what I had experienced over the years with my learners.”*

The collage assembled by Participant 4, Chad, showed much emphasis on the inattention symptom of ADHD. Chad outlined his collage into the shape of a brain, which implies that he understands ADHD as a brain disorder. He had pasted many pictures, depicting the inattentive symptom of ADHD, with only one image depicting hyperactivity, or impulsivity (image 4.6.1). This could imply that he either experienced ADHD learners only with inattention as a symptom, or he understands ADHD to be a disorder that mainly manifests as an attention deficit. Chad mentioned in his discussion, that he can only observe and prepare a report that will be sent with the learner upon assessment and diagnosis of ADHD. Moreover, he depicted medication as the only treatment option for ADHD. Chad did not include his understanding of the way in which, he accommodates learners with ADHD.

5.4.1.5. Participant 5- Tom



Figure 4.7 Picture of collage created by participant 5: Tom



Figures 4.7.1 – 4.7.7. Specific pictures referred to by participant.

Researcher: Please explain the meaning of your collage.

Tom: *“My collage depicts my understanding of ADHD in learners. These include the symptoms, as well as the treatment, or alternative techniques. I have used pictures that show emotional turmoil, which is one of the many symptoms of ADHD. The picture on the top left corner (Image 4.7.1), depicts a child having outbursts of anger at inappropriate times - in this instance, whilst doing homework. The picture at bottom center (Image 4.7.5), depicts a learner having trouble paying attention, even when someone is speaking to them. They will say they heard you, but will not be able to repeat what you just said. My knowledge about the treatment of ADHD, include stimulants such as Ritalin, which is best known and widely used for treating children with ADHD. Also, from my experience it is fast-acting. My collage also includes images that portrays behavioural therapy for learners suffering with ADHD (Image 4.7.6). It is an alternate approach to treatment. Behavioural modification is helpful and may even allow a parent to reduce the intake of medication. Some examples of behaviour modification, may include ways to allow ADHD learners to understand rules, giving clear commands to the child, a system for rewards or consequences.”*

Researcher: Where have you included the symptoms of ADHD?

Tom: *“The image on the top right (Image 4.7.2) displays the emotional outbursts of learners with ADHD. This picture (Image 4.7.2) informs us about the emotions felt by ADHD affected individuals. These include; emotions that act faster than the brain and the learner does not have time to decide how to react to a situation, the ADHD learner has a low frustration tolerance, boring tasks are frustrating, the ADHD learner may feel in danger, isolated, confused, criticized, etc. The bottom center picture (Image 4.7.5), depicts a learner with a lack of focus. The bottom right picture (Image 4.7.7) shows an ADHD learner being hyperactive.”*

Researcher: Where have you included diagnosis and treatment of ADHD?

Tom: *“The bottom left and right picture of pills surrounding learners with ADHD (Image 4.7.4) which represents the treatment available for learners with ADHD. The bottom center picture (Image 4.7.6) portrays the therapy and behaviour modification available as treatment for learners with ADHD.”*

Researcher: If you had to sum up your understanding of ADHD by just one picture or word, which would that be?

Tom: *“The picture on the top right labelled “ADHD & emotions” (Image 4.7.2) as it explains a range of emotions that children or learners with ADHD experience. These include frustration, cognitive overload, hyperactivity, obsessive, smartness etc.”*

Researcher: Which parts of the collage represents you as being a teacher of an ADHD learner/s?

Tom: *“As an educator, there are many pictures in the collage that depict my understanding of learners with ADHD. For example, the little girl who is playing with her pencil, (image 4.7.5) shows lack of focus. She is inattentive during class lessons. The picture with the little boy (image 4.7.3.), acting silly whilst his teacher is writing on the board displays hyperactivity. This is a common symptom in my classroom. Learners with ADHD often cannot sit still. They try to get up and run around, fidget or squirm in their chair when forced to sit in a confined space.”*

Researcher: Whilst creating your collage, was there anything that added to your understanding of ADHD learners?

Tom: “Yes, there is a range of alternative techniques that can be considered, instead of medication. Many parents opt not to treat ADHD in their kids with pills, as it tends to make the child withdrawn, even suppressing the child’s appetite and personality. Play can be used as a therapeutic tool in the treatment of ADHD, as many kids can express themselves through play. As said before, behavioural therapy also allows for a lower dosage of medication.

The response received from Participant 5, Tom, clearly contains a sound understanding of the symptoms, treatment options and accommodation of ADHD learners in a mainstream classroom. He has included inattention and hyperactivity of ADHD. Additionally, he depicted the finer details, by providing his understanding of reasons, for the manifestation of ADHD in his classroom. Whilst having a sound understanding of the symptoms, treatment options and accommodation of ADHD learners in a mainstream classroom, it is evident that Tom did not depict, or touch on his understanding of the diagnosis of ADHD. This may indicate the lack of knowledge, regarding the diagnosis of ADHD. Tom has portrayed understanding of a few treatment options, such as medication and behaviour modification.

5.4.1.6. Participant 6 - Sandy

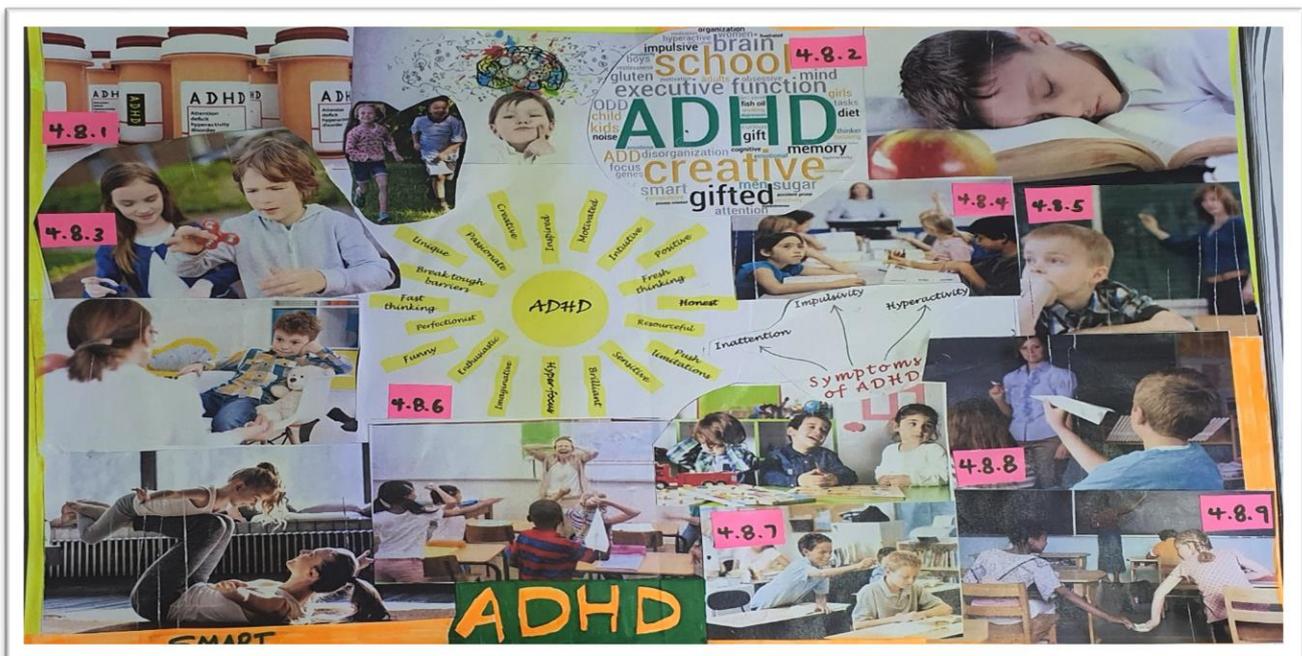
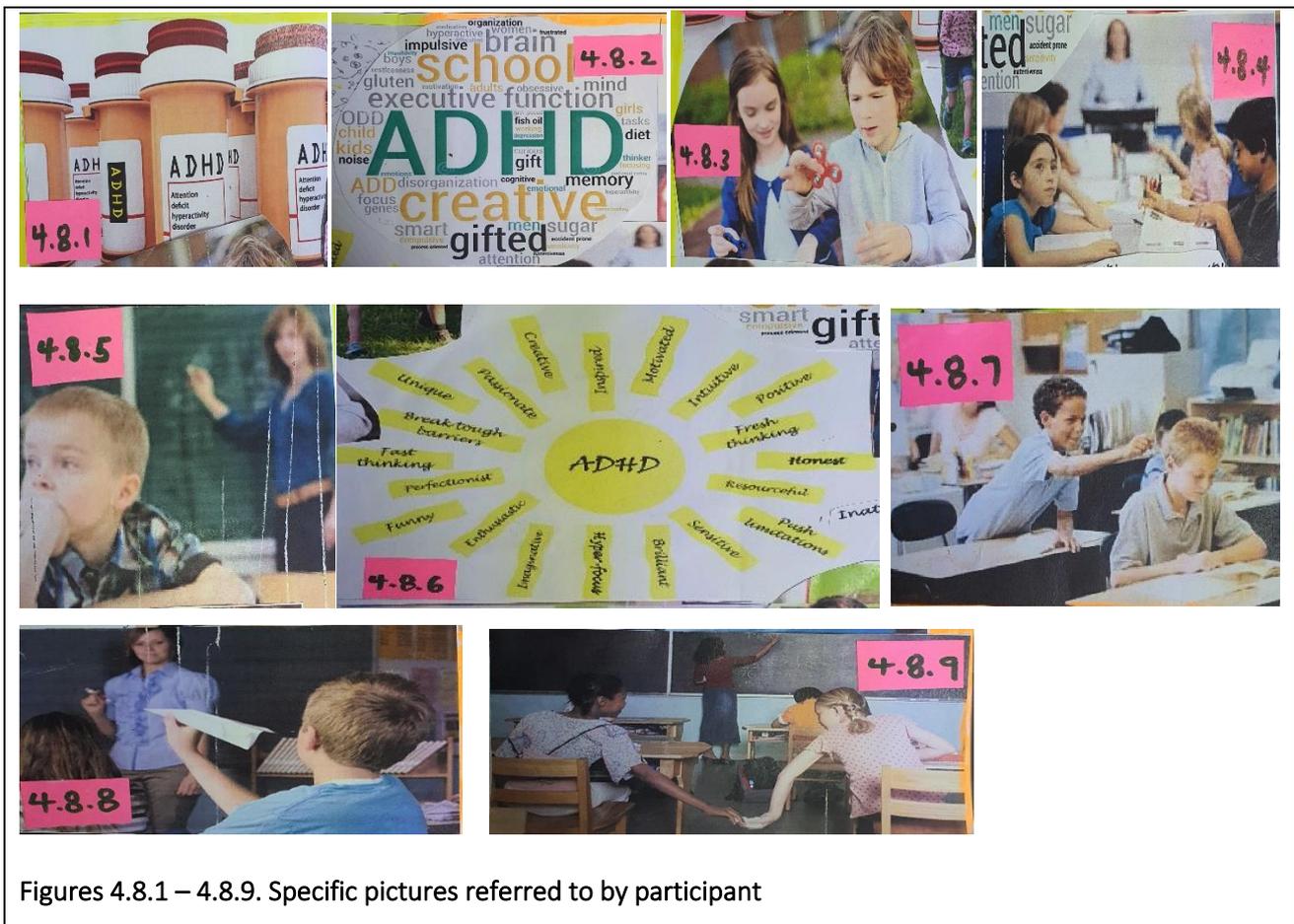


Figure 4.8 Picture of collage created by Participant 6: Sandy



Figures 4.8.1 – 4.8.9. Specific pictures referred to by participant

Researcher: Please explain the meaning of your collage.

Sandy: “My collage portrays my understanding of the symptoms and treatment of ADHD in learners. For example, one of the symptoms of ADHD is inattention. The picture on the top (Image 4.8.2) displays the different categories that fall under ADHD. The picture on the top left corner (Image 4.8.1) shows one form of treatment for ADHD learners, which is Ritalin, in a form of a pill. The picture containing children playing with the fidget spinner (Image 4.8.3), shows the alternate forms of therapy available for learners with ADHD. This also improves motor skills. The picture pasted at the middle bottom (Image 4.8.7), depicts a learner interfering with another learner with a pencil. The picture on the right of the sun (Image 4.8.4,) depicts a learner daydreaming, whilst others are concentrating on the lesson.”

Researcher: Where have you included the symptoms of ADHD?

Sandy: “My collage contains pictures of the symptoms of ADHD on the right-hand side, the top half contains pictures of inattention and the bottom half, contains pictures depicting hyperactivity.”

Researcher: Where have you included diagnosis and treatment of ADHD?

Sandy: *My collage contains pictures of treatment on the left side, such as exercise, counselling and using the fidget spinner. The top left portrays pictures of medication used to treat learners with ADHD, such as pills. The bottom left depicts alternative therapy, which may be exercise and behaviour modification therapy.*”

Researcher: If you had to sum up your understanding of ADHD by just one picture or word, which would that be?

Sandy: *“The sun picture at the center of the collage (Image 4.8.6), would sum up my understanding of ADHD. The picture contains rays of sunlight, which depicts the personality traits that a learner with ADHD, portrays. These include hyper focus, imaginative, enthusiastic, funny, perfectionist, fast thinking, break-through barriers, unique, passionate, creative, inspired, motivated, intuitive, positive, fresh-thinking, honest, resourceful, push limits, sensitive, and brilliant. These traits imply that learners with ADHD, possess desirable and undesirable demeanours.”*

Researcher: Which parts of the collage represents you, as being a teacher of an ADHD learner/s?

Sandy: *“The picture pasted on the top right of the collage (Image 4.8.5), whereby the learner is sleeping, suppressed and lacks concentration as I see this often in learners with ADHD. The picture below that shows inattention whilst lessons are taking place. The picture below that (Image 4.8.8), whereby the learner is playing with a paper jet which portrays hyperactivity and disruptive behaviour. The picture pasted below the sun illustrates learners with different traits, such as being disruptive, impulsive and hyperactive.”*

Researcher: Whilst creating your collage, was there anything that added to your understanding of ADHD learners?

Sandy: *“Yes. Firstly, I realised that I need to find other teaching methodologies and to adapt my lessons, to accommodate learners with ADHD. Secondly, I need to include behavioural modification techniques, like establishing routines, having checklists, etc. in my class.”*

The collage created by Participant 6, Sandy, portrays her understanding of ADHD, which included the symptoms, treatment options and the accommodation of ADHD. Unfortunately, Sandy does not portray her understanding of the diagnosis of ADHD. She has included the symptoms such as hyperactivity and inattention, the treatment options, such as medication and behaviour modification therapy, as well as her emotions of teaching learners with ADHD. It can be assumed, that Sandy has a good understanding of the symptoms, treatment options and accommodation of ADHD learners, but lacks understanding of the diagnosis procedure.

5.4.2. Discussion on overall findings from the collages- Theme 1: The contemporary understanding of ADHD.

This data production tool aimed to explore teachers' understanding of ADHD, in a public mainstream classroom. There are many advantages of using collages to obtain data. Butler-Kisber and Poldma (2010, p. 4) articulate "Collaging can also be helpful in conceptualizing [sic] a phenomenon by fleshing out different facets in order to get a nuanced understanding of it". Additionally, Diaz (2002) states that the usage of collages can open a dialogue amid diverse people, provide additional insights and reflection, as well as offer new ways to explore a subject. Hence, I had utilised this data production tool to conceptualise the different understandings of ADHD in the mainstream classroom. This data production tool allowed for participants to reflect on their practise of teaching ADHD learners. Furthermore, I noticed that participants were able to expand their knowledge concerning ADHD, by the means of creating the collages.

The six participants received instructions (see Appendix F) on creating a collage. The participants were eager to get started as they knew what was expected of them. The COVID-19 pandemic altered the way data production was supposed to be obtained. Two out of the six participants worked from home, whilst the other four worked at school during their free periods. The two participants that worked from home, sent through their collages via email and the semi-structured interview based on the collage was done via zoom. The other four participants handed over their collages and the instructed interview, was done with adherence to the COVID-19 regulations.

Based on the findings from the collages, it is evident that all participants fully understand the symptoms of ADHD. Five out of six participants included a balance of hyperactivity and inattention, as symptoms of ADHD, whilst one of six participants, portrayed an understanding of only inattention, as a symptom of ADHD. This could imply that this participant has only

experienced the inattentive symptom of ADHD. A justification of participants having a sound understanding of ADHD is corroborated in the The Diagnostic and Statistical Manual of Mental Disorders-IV-Text Revised (APA, 2000), which explains ADHD as a developmental disorder characterised by inattention and hyperactivity, impulsivity, or a combination thereof. Similarly, Baker (2005); Harisparsad (2010) and Picton (2002) express that ADHD may manifest itself in a learner being inattentive, hyperactive, and impulsive or having combined symptoms.

5.4.2.1. Participants' understanding of the symptoms of ADHD

- **Hyperactivity** - five of the six participants had mentioned hyperactivity as a symptom. According to Barkley (1997), psychological characterised types of information will have affective, motivational, appetitive, and even arousal states. In stating so, ADHD learners are not capable of controlling their negative outbursts and they are not able to react positively, when they are faced with anger, frustration, disappointment, sadness, anxiety, or boredom. Hence, ADHD learners, from time to time are found to be hyperactive or impulsive for long periods in their development, than other learners, who are not ADHD.
- **Inattention** - all participants had mentioned inattention as a symptom of ADHD. Barkley's model (Barkley 1997) envisages that deficits in behavioral inhibition often lead to deficiencies in non-verbal working memory. These deficiencies include specific forms of forgetfulness, whereby ADHD affected individuals, find themselves forgetting to do things at certain times. ADHD affected individuals may also experience the deficiency of reduced ability to establish and perform actions, in relation to time (for example, managing time) and abridged hindsight and forethought, resulting in a decrease in the formation of anticipatory action, for future events. The prediction within the poor working memory executive function of this model, directs itself to the inattentive symptom of ADHD.

5.4.2.2. Participants' understanding of the diagnosis of ADHD

The responses received from the participants regarding the diagnosis may be alarming, as three of six participants did not include their understanding of the diagnosis of ADHD, one of six participants included very briefly their understanding of the diagnosis of ADHD, and only two of six, portrayed a sound and comprehensive understanding of the diagnosis of ADHD. ADHD is usually diagnosed by a psychologist or a medical practitioner (Schellack & Meyer, 2012). The Diagnostic and Statistical Manual of Mental Disorders-IV-Text Revised (APA, 2000) is a

tool that is used to diagnose a learner with ADHD, where a specific criterion needs to be met. According to the DSM-IV-TR (2000), there are no laboratory tests, neurological assessments, or attentional assessments that have been established as diagnostic tools in the assessment of ADHD.

Parents and teachers are asked to fill in a behaviour questionnaire, or checklist, in order to determine if a child “always, often, sometimes or never” (Whitely, 2010) exhibits behaviour such as fidgeting, talking excessively, losing things or being easily forgetful or distracted, as major symptoms of ADHD. Ricco stated that *“the child presents with characteristics of distractedness, inattention, etc and is sometimes referred to a health professional by the class educator or a pro- active parent will take the child. Some form of checklist and testing is administered, and the DSM 5 will be completed with information gained from teachers and parents.”* Chad mentioned that *“as an educator one cannot or should not diagnose a learner with ADHD. Instead you should observe and prepare a report to attach to your referral to an educational psychologist.”* It is evident that Ricco and Chad have a sound understanding of the diagnosis as per Whitely (2010) had mentioned and the DSM-IV-TR (APA, 2000) requirements.

Kally presented a very brief understanding of the diagnosis of ADHD. Kally stated that *“the parent of the ADHD child is required to meet with a specialist, to discuss assessment and treatment options”*. She did not include the process whereby the teacher is required to provide the specialist with observable information. Samo, Tom, and Sandy did not portray an understanding of the diagnosis of ADHD.

5.4.2.3. Participants’ understanding of the accommodation of ADHD learners in a mainstream classroom and the treatment options available.

All participants showed a clear understanding pertaining to the treatment options as they indicated that ADHD can be treated using medication. Four of six participants clearly indicated Ritalin as medication for the treatment of ADHD, and two of six participants did not specify the name of medication. Woods and Ploof (1997, p. 79) express that “neurochemical factors have been believed to be contributory to the development of ADHD from the 1970s and research in this area found specifically the lack of the neurotransmitter dopamine as causal”. Sadock and Sadock (2003) confirm this by stating that many neurotransmitters are associated with the symptoms of ADHD. The hypotheses about the neurochemistry of ADHD have

primarily evolved from the effect of medications on symptoms of attention and hyperactivity symptoms (Sadock & Sadock, 2003; Venter, 2006).

Studies have suggested possible lack in the production of dopamine and norepinephrine neurotransmitters (Sadock & Sadock, 2003), where the prescription of drugs such as Ritalin for the management of this disorder, was initiated (Diller, 1999). According to Busardò et al. (2016, p.17), “Methylphenidate (MPD) is a central nervous system (CNS) stimulant, of the phenethylamine class, available on the market, with the following trade names: Ritalin, Equasym XL, Concerta, Quillivant XR, Methylin, Metadate and Focalin is mainly used in the treatment of attention deficit hyperactive disorder (ADHD).”

Participants included behavioural modification, talk therapy, exercise and counseling, as other treatment options. Four of six participants had mentioned behavioural modifications such as reinforcing classroom rules and routines, allow for decision making, and to relook at assessments, to accommodate ADHD learners. Samo mentioned that she encourages individual therapy, she allows for some creativity to be expressed by the ADHD learners, she encourages group work and uses differentiated assessments. Ricco also mentioned “*I do as much one- one work with each child as possible, I find working side by side works well.*” Moreover, she allows for decision making and makes use of differentiated assessments.

Kally mentioned that she uses behavioural strategies such as charts and checklists. She also establishes routines and reinforces them regularly. Sandy mentioned that she uses behavioural modification. However, no details were given. It is evident that Samo, Ricco, Kally and Sandy show a sound understanding of the treatment and accommodation of ADHD learners, as they are using the antecedent approach within their mainstream classrooms. According to Kendall (2008), there are many antecedent inventions that are available to prevent inattentive and disruptive behaviors from occurring, which include behaviour modification, that will be influenced by classroom rules and routines, differentiated assessments and choice making. Antecedents can be defined as occurrences that precede and trigger an outburst of a specific behaviour.

Whilst Sandy uses the antecedent approach, she also uses the consequence-based approach as she praises the achievements of ADHD learners. The contingent positive reinforcement in the form of teacher praise or token reinforcement, is seen as a common behavioural intervention for learners affected with ADHD (Du Paul & Stoner, 2003). The response from Chad regarding

treatment options, was the use of Ritalin. He did not mention the accommodation of ADHD learners in a mainstream classroom.

5.4.2.4. Participants' understanding of ADHD summarised by one word or one picture

The participants were very clear in their summarised understanding of ADHD. Samo mentioned *"The word unique would be the word I would use. Each learner is unique in their needs and character."* Ricco referred to image 4.4.5 in his collage, which states *"the truth about kids with ADHD is that they are: passionate, talented, creative, alive with curiosity, charismatic charmers, lovable, energetic, lots of fun, smart, real smart, little negotiators- yep, they will outsmart you!), out of the box thinkers, ready to rule the world, gosh- they are really smart, and have an unrivaled zest for life! You just got to love 'em!"* Ricco further states that *"There are lots of positives aspects about the child who has ADHD, even more than there are negative- he/she just needs to be given a chance."*

Kally's summarised understanding of ADHD was illustrated by *"The picture of the little boy with six hands (image 4.5.6). This just depicts how children with ADHD have so many things running through their brain at the same time."* Chad referred to image 4.6.4 *"as it shows the emotions and what is really going on in the brain of a learner with ADHD"*. Tom's summarised understanding was portrayed in image 4.7.2. *"as it explains a range of emotions that children or learners with ADHD experience. These include frustration, cognitive overload, hyperactivity, obsessive, smartness etc."* Furthermore, Sandy used image 4.8.6. to depict as her summarised understanding of ADHD. The picture contains rays of sunlight which depicts the personality traits that a learner with ADHD portrays which *"include hyper focus, imaginative, enthusiastic, funny, perfectionist, fast-thinking, break through barriers, unique, passionate, creative, inspired, motivated, intuitive, positive, fresh-thinking, honest, resourceful, push limits, sensitive, and brilliant. These traits imply that learners with ADHD possess desirable and undesirable demeanors [sic]."* Through the analysis of the responses pertaining to a summarised understanding of ADHD, it is evident that the participants portray a sound understanding of ADHD as a concept or disorder.

5.4.2.5. Participants’ newly added understanding of ADHD through the creation of their collages

All six participants articulated that their knowledge expanded through the creation of their collages. Kally specifically discussed that *“there are so many learners that show symptoms of ADHD and it is becoming the new norm at our school. Our curriculum needs to be adapted to allow for these kids to be able to cope with or without medication. We need to bring in more behavioural modification techniques into the classroom.”* Moreover, participants gained better insights regarding the accommodation and management of ADHD in a mainstream classroom.

5.4.3. Reflective Journal - Theme 2: The experiences that influence the understanding of ADHD.

This data production method addressed the following:

Second research question:	Second objective of this study:
Why do teachers enact these current understandings of ADHD in public primary mainstream classrooms in the way that they do?	To explore why teachers have enacted these understandings of ADHD in public primary mainstream classrooms in the way that they do.

Participants were issued with a journal, to reflect on their experiences of teaching ADHD learners in a public primary mainstream classroom, to determine why they have enacted their understandings, in the way that they do. Presented below, are the responses from each participant (transcribed verbatim).

5.4.3.1. Participant 1- Samo

“Attention deficit hyperactivity disorder is a common disorder amongst school-aged children. The classroom environment triggers ADHD symptoms when learners are required to be quiet, sit still and concentrate on the lesson being taught. In my experience of teaching ADHD learners, I have learnt that ADHD does not always show its characteristics through impulsivity and hyperactivity. It is also the learner that is spacing out at the back of the class or the quiet child that is fidgety and keeps taking out his/her pencil in and out of his/her pencil case.

I was advised by the researcher to use pseudonyms if I needed to mention names of specific learners, which I have done. I have observed that in public mainstream schools, the class sizes are big and therefore make it difficult to completely accommodate learners who are ADHD or the learners who have other needs in the classroom. In a classroom of 45-50, there are at least three to four learners that are ADHD and one ADHD learner in a class that is disruptive, fidgety, and constantly wanting to move around equates to five learners that are not ADHD. I have to accommodate these learners as they constantly disrupt lessons, are touchy, cannot sit for long lessons, many are loud and are constantly talking, and require individual attention and teaching strategies. This behaviour also takes time away from instruction and disrupts the entire class. The direct teaching method cannot be used when teaching a class with learners who have diverse needs.

I have experienced different types of ADHD learners whilst teaching in a public mainstream classroom. I have come across Sahil, who is smart, active, completes his work but cannot control his impulsivity and frustration. He gets outraged by his emotions and has anger outburst and cannot control his thoughts or actions when in this state compared to Liam, who is quiet, easily distracted, daydreams, cannot sit still and fails to complete tasks given to him. Sahil's needs in the classroom are different compared to Liam's. Whilst Sahil requires to be dealt with slightly firmly and to be kept mentally stimulated as he is capable of completing activities independently, Liam requires to be constantly reminded that he has tasks to complete, he is academically weak and requires the extra individual attention. I've also experienced Mikayle, the learner that is infuriating and exasperating, who cannot keep quiet, is hyper, who is very fidgety, talks a lot, and must be constantly reprimanded and told to do his work, but has no anger outburst whilst also teaching Thando, who is academically weak yet creative, who needs tender care and to be spoken to with love and when easily frustrated has outbursts but when he reaches a breaking point, he cries. Each of these learners portray ADHD in different ways. Some act out, whilst some do not.

By observing learners with ADHD, I have also learnt that their academic needs vary. Whilst Sahil is academically inclined and learns easily through theory, Liam learns best verbally, and Thando learns best through creativity. These learners' needs differ from one another in and out of the classroom.

ADHD is one of the most common disorders that is suspected when a learner's behaviour in class, or their academic performance is problematic. Some well-known symptoms I have

experienced in an ADHD child is that the child cannot seem to sit still, is very fidgety, speaks out of turn or blurts out answers in class without raising his/her hand, does not complete their homework and is daydreaming when the educator is giving instructions. Sometimes, this behavior also occurs due to anxiety or trauma.

In my experience, many ADHD learners, despite taking medication to enable them to continue with their academic work, the way a child is managed in class makes a difference to the child's behaviour. A few factors that I have tried and have helped me minimise a child's behavioural difficulties is to provide regular varied mental stimulation tasks, knowing and understanding a learner's background (home and school environment), the learners interests, developing a genuine relationship with the learner and making the learner familiar with me so that he or she is comfortable to be in my class, having a feeling of belonging.

Some of the symptoms that have presented themselves in my classroom and that I have experienced is the learners that: are restless; are easily distracted; talk loudly and out of turn; runs around the classroom; struggles to follow instructions; have difficulty socializing (some learners); experience delays in academic performance (some); finds it difficult to concentrate; are forgetful, emotional, daydreams and in some cases have anger outbursts.

With having ADHD, learners come with many struggles. Some of the challenges I have experienced:

- *The daily fight to get the learner into the class and to settle them for the lessons throughout the day.*
- *It is difficult to hold the attention of learners that are ADHD and requires a lot of strategies in the classroom.*
- *My lessons are continuously disrupted, also taking away instruction time.*
- *Tasks or homework given to some of these learners are not submitted on time or not completed by some of them.*
- *I have to constantly follow up on these learners, reminding them to complete the tasks given to them in the class.*
- *Some learners with ADHD are strong-willed, and struggle to cope with their frustration; this is when they act out by throwing around their books, throwing a chair or table and sometimes taking this frustration out on others resulting in anger*

outbursts. Some of these outbursts are difficult to control, injuring the educator and others involved.

There are many types of treatments for learners with ADHD. The most commonly used around me is the medication, Ritalin. There is also therapy which a learner can attend, such as talk therapy, anger management, family therapy and behavioral analysis. Another way that I have experienced that help learners with ADHD is to get them actively involved in the lessons that take place, to get them to participate in activities and to answer exercises on their own using their own approaches.

With teaching learners that are ADHD, there are positive and negative emotions that I have experienced. Teaching learners with ADHD is exceptionally draining. I've had to have many strategies in order to hold these learner's attention. It sometimes tends to become frustrating for both the educator and the learner. Some of the feelings I have experienced would be feelings of guilt, especially when not enough attention is given to the other learners in the classroom. Often the feeling of giving up occurs, when I feel like I am not getting through to the child. However, the feeling when I get positive feedback, even just a little is one that outweighs all of the negative feelings I've ever had. When I know I have made progress with the learners, formed a genuine relationship with them where they are able to communicate with me and I am able to get through to them on many levels (academically and emotionally) brings a feeling of contentment, success and satisfaction to me. With the correct teaching tools, strategies and creative planning, I am able to succeed and achieve these feelings.

I have observed that most kids with ADHD and poor coping skills co-operate very well if they have the right support.

I accommodate for learners with ADHD by:

- *Developing a strong relationship with my learners which help me to understand them and cater for their needs in my classroom.*
- *I seat the learner away from the windows and the door to avoid distractions.*
- *I try to place the learner closest to me preferable by my desk. This can be a distraction for some learners, if so, I move him/her to a better suited place where there is little or no distractions.*
- *I try to keep my classroom an area free of distractions to the best of my ability.*

- *I repeat instructions as necessarily needed.*
- *I try to integrate different and unique teaching strategies to accommodate for the needs of all learners in my classroom. Example by using the hands-on approach, visualisation and using movement when learning.*
- *I give individual attention to learners who cannot cope and have difficulty understanding certain aspects.*
- *I use the buddy system. I pair up the weaker learners with the academically inclined learners.*
- *I integrate technology and use educational games to ensure better understanding.*
- *I keep my instructions as simple and structured as possible.*
- *I modify and assign activities that cater for all academic levels.*

Observing and experiencing such behaviour in kids, getting to know the different types of learners and catering for their specific needs in my classroom have helped me in understanding ADHD in the way that I do.”

5.4.3.2. Participant 2- Ricco

“Experiences that have influenced my understanding of ADHD:

- *Working in the normal, mainstream classroom, with children who struggled to make progress,(but who were able to give answers and spoke well and with confidence), while others readily understood concepts and made progressive improvements in keeping with the norm that we were taught at university. This began my search for understanding.*
- *Case study work for my B.Ed. (Hons). The practical experience allowed me to better understand the theory - therefore to better understand the behaviours I was seeing.*
- *A compassionate, empathetic and insightful lecturer, who guided our case study, throughout the year, who was not afraid nor too proud to visit the child who was my case study at his home, in a dingy one bedroom flat.*
- *The filling of referral forms/parent interviews for children who needed psychological assistance and special class placements (from 1990).*

- *That feeling of inspiration when you see that look of “eureka” when a child suddenly understands, after struggling for months.*
- *The child who hasn’t been able to make friends but feels comfortable enough to come visit with me during the lunch break, or who makes the effort to pop his/her head around the door to say goodbye at the end of the school day. What these children chat about, makes the condition more real and tangible.*
- *Workshopping the subject for others has improved my own knowledge.*
- *Teaching LSEN learners.*
- *Being amongst like-minded individuals, who discuss and debate issues regarding special needs children and who offer ideas and strategies and support.*

How I received insights about ADHD:

- *Classroom practice*
- *Postgraduate studies*
- *Workshops/talks*
- *Short courses*
- *Own research and reading*
- *Internet sources such as YouTube and a variety of special education sites which offer resources and information*
- *Talking to parents about their children*

How I gained my knowledge of the symptoms of ADHD:

- *Post graduate studies*
- *Own research*
- *Short courses through Embury College on Inclusive Education*
- *Department workshops and training*

How I gained my knowledge of the treatment of ADHD:

- *Embury courses*
- *Postgraduate studies*
- *Own research*

Challenges that I have faced with ADHD learners:

- *Some parents believe that it's just a phase that the child is going through and that he will grow out of it. Often, they say, "He's just like me when I was his age! Look at me I turned out fine!" Parents may themselves have been undiagnosed with ADHD and therefore feel the behaviour is normal.*
- *Parents refuse to accept that their child needs additional support and so refuse to take the child for an assessment. Inappropriate behaviour generally gets progressively worse. When this happens (i.e. lack of parental acceptance of the suspected condition), and much teaching time is used to keep behaviour in check/enforce discipline and control so that teaching and learning can take place.*
- *If the condition goes unchecked, I have had cases where the child experiences much frustration and lashes out at other children. They become bullies - they are able to bully the other children, as their lack of control/impulsiveness and aggression creates fear.*
- *Conversely, I have taught a few ADHD children who have become victims of bullying because of their lack of attention to what's going on around them and their naiveté/gullibility.*
- *If parents do take their child for an assessment and medication is recommended, they decide not to give their child the medication, and also fail to employ some sort of behaviour modification therapy to assist.*
- *Children receive medication in an inconsistent manner*
- *Parents do not regularly check in – only check in when called to school.*
- *Parents do not disclose correct information about the child's/their own history because of a fear of stigmatisation or a refusal to accept the possibility that ADHD/learning difficulties might be discovered.*
- *Often parents have not been sufficiently empowered by the healthcare professional.*

Emotions I feel when I teach ADHD learners:

- *Happy, when they come into the LSEN room ready to start work.*
- *Pride, when they finally work it out -when they understand what it means to decode a word so they can read it.*
- *Inspired, when they persevere, and they want to try again.*
- *Frustrated, when they are consistently absent for no reason.*

- *Hopeful, when they ask an interesting question.*
- *Disappointed, when I hear educators constantly complaining about them. Teaching children who have ADHD can be an arduous task, but I find that I enjoy it.*

How I accommodate ADHD learners academically and physically in the classroom.

ACADEMICALLY:

- *LSEN PROGRAMME*
- *REMEDIAL PROGRAMME (for those who don't make it onto the official programme)*
- *Alternative methods of teaching/testing- oral/ pictorial/ groupwork*
- *Additional time given to complete tasks*
- *Reading out of tasks/information/instructions wherever and whenever necessary*
- *Regular verbal reminders during task work to stay on task*
- *Positive regular reinforcement – don't focus on/ try to ignore the negative when possible*
- *Use of concrete aids*
- *Concession application*

PHYSICALLY:

Place child:

- *In my line of vision*
- *At the front of the class*
- *Away from the door*
- *Next to another child who has volunteered to assist.*
- *Where I can physically reach him/her*
- *Sometimes in front seated at a single desk*
- *Always at the front of the line.*
- *Use physical cues like a band tied on wrist or draw a picture as a reminder for something/place my hand on the child's shoulder to remind child to attend to task, if very distracted/ use a clock etc*

5.4.3.3. Participant 3- Kally

“I find that learners in my school with ADHD firstly find it hard to sit still for an extended period of time. There is a constant need for movement. Secondly, they are easily distracted by the other learners and the classroom environment. Throughout the day they will be swinging on their chairs or tapping their pens or fingers on the table. Learners with ADHD tend to blurt their thoughts out before others have finished speaking. This interrupts me during important instructional time which affects not just the child’s ability to hear instructions, but the other learners as well.

I have received insights into ADHD through various ways. My experience with teaching LSEN (learners with special needs) learners in the previous school that I worked at. I have also gained much insight from transference skills workshops attended on autism and other learning disabilities. Another way was from my personal experiences with my two children who are on the spectrum and the knowledge I have gained through research. Furthermore, my experience with teaching ADHD learners and by observing the manifestation of ADHD has contributed to ways in which I received insights of ADHD.

With regards to the symptoms of ADHD, I have gained this knowledge from my experiences of teaching ADHD affected learners. I noticed that learners with ADHD, are easily distracted and therefore make careless mistakes with their schoolwork. They have difficulty following instructions or directions. They do not seem to listen when spoken to directly. They often fail to finish work in the classroom and avoid tasks that require sustained mental effort, like doing homework. Learners with ADHD also fidget or squirm and have trouble staying in their seats. They will talk excessively or blurt out answers, before a question is complete. This is first-hand experience, which has given me an idea of the symptoms of ADHD.

I have gained knowledge regarding the treatment of ADHD, through personal experiences. I administer the medication prescribed by the learner’s doctor, or specialist. I manage or treat ADHD in the classroom, by establishing short and simple classroom rules and routines that are easy to understand. I give directions in simple terms and simplify all instructions tasks and assignments. I am also patient and repeat instructions and rules regularly. Additionally, I ensure that all tasks are handed in even if I must give extensions on assignments, homework, and tests so that no learner is left behind. To maintain appropriate behaviour, I reward good behaviour and praise them so that their self-esteem is boosted.

I have faced a few challenges within my classroom. Learners with ADHD in my class are often highly impulsive, hyperactive and distractible. They may struggle to complete tasks and often lose or misplace their items. This restless inattentiveness, often leads to frustration for both me and other learners in the class as the teaching and learning process is often interrupted.

Teaching learners with ADHD, can be extremely frustrating and overwhelming. I cannot form a bond with some of the learners with ADHD like I do with other learners because of the behaviour problems that they pose in my classroom and the distractedness.

I have adapted ways to accommodate learners with ADHD in my classroom. I ensure that the ADHD learner is seated in an area with fewer distractions like the front of the class, where he or she can focus on the lesson. I try to shorten the length of the tasks or assignments given so that the learner does not feel overwhelmed. I also make sure that the tasks I have given, are clear and that concise instructions are written on them. I ensure that I explain it out aloud. I also give them an extended period of time, to complete projects, assignments and test.”

5.4.3.4. Participant 4- Chad

“In a mainstream classroom, in a public primary school, it is not uncommon to have more than 45 learners. Added to that mix, you may have more than one learner who is ADHD. As an educator you have a syllabus to complete and very often the ADHD learner is going to demand your attention. Frequently, you would be forced to stop the lesson and pay attention to him or her.

It is difficult to be understanding, compassionate and patient with these learners, if you believe that they are just being naughty and disrespectful. As an educator, you must observe learners closely and record behaviour patterns. I have involved parents, when I encountered symptoms of ADHD. I have prepared reports and referral letters to the relevant institutions. Often, parents do not want to accept that their child needs to be assessed by a psychologist.

I have received insights of ADHD from past experiences. When I started teaching in the eighties, children who did not conform to the norm were labelled as being “naughty” and were punished. Corporal punishment was the order of the day. Even then, there were learners who could not sit still and focus on the lesson... they paid the price. They were reprimanded and punished by being chased out of the class etc.

As an educator, I realised that some learners could not help themselves – they were not just being naughty. I did not know what was wrong, but I put it down to the learners having some

problems. As a result, I was never very harsh with my learners. I treated them with love. It was only much later that I attended a workshop and for the first time this condition that I had seen in my classroom was identified as a real problem. I then read up whatever literature I could find.

With regards to the symptoms of ADHD, I had already seen all the symptoms over the years. Inability to pay attention for a length of time – very limited attention span and often takes very long to complete even a short task. In some instances, I have found that this problem can be so severe that even when I am giving the learner individual attention in a classroom, when we are alone with very few distractions – the learner still struggles to focus on the task.

Hyperactivity, which the learner displays through his or her behaviour comprising of aggression, excitability, fidgeting, lack of restraint etc. Another common symptom is learning disabilities. The ADHD learner often experiences great lags, in respect of reading and sometimes, in Mathematics. In my experience, I have encountered many learners with ADHD who also struggled with learning problems. I believe that often the learning problems are as a result of an inability to focus (inattention). Much of my insights into ADHD and dealing with learners with this problem has been as a result of encountering problems in the classroom and trying to find ways to cope.

When a learner displays symptoms of ADHD for a prolonged period, he or she is referred to a clinical psychologist. Most of our learners depend on the public sector hospitals etc., so they go to the Lenham Assessment Centre. The learner has to attend a series of sessions, therapy and counselling sessions before he or she is referred to a hospital. By this time, the psychologist would have made the diagnosis. In my experience, working with these learners, I have repeatedly seen how remarkably well the medication works. I remember a case that stands out, where I did not share with the other educators that a particular child was on Ritalin. The change in the learner was so noticeable, that every teacher mentioned it to me.

Most of the knowledge that I have acquired is because of my experience of working with these learners, who are ADHD, attending workshops and reading. Parents are often very reluctant, because of some of the side effects of the medication.

I am faced with many challenges. Large class sizes, make it difficult to give individual attention to learners with specific problems, namely ADHD. Teachers are expected to complete a syllabus. Parents are sometimes in denial. It takes months, sometimes even years, to convince

them that their child needs to be assessed. Even when they do get an appointment to see the psychologist parents fail to avail themselves.

As an educator your hands are tied. You may strongly suspect that a learner is ADHD and needs professional help, but the parents are in denial and there is very little that we can do. Lessons are constantly disrupted by the ADHD learner. It is sad that the other learners in the class, must tolerate the ADHD learners. As an educator you experience a whole host of emotions. My mind map below, illustrates that.

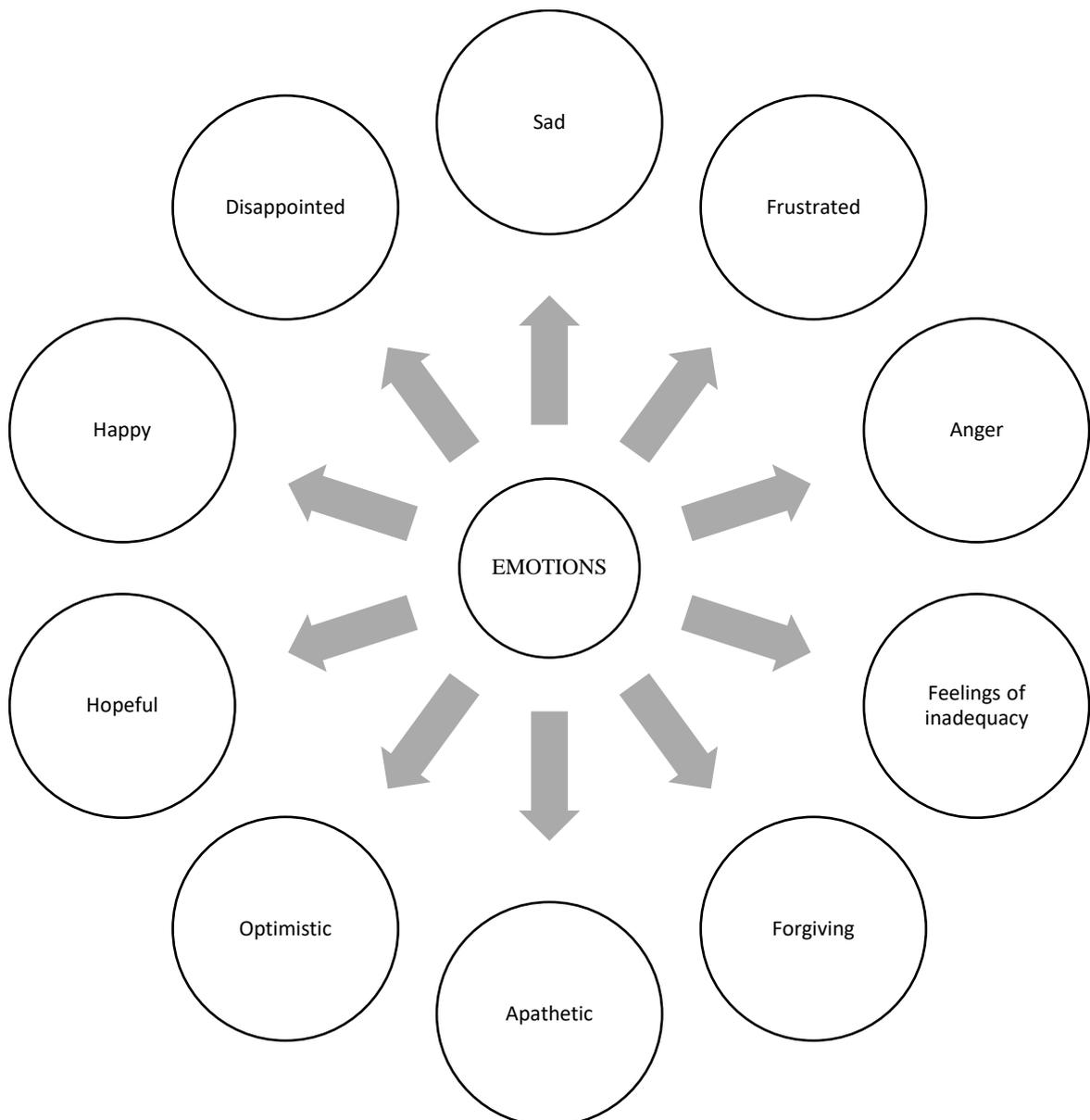


Figure 4.9. Emotions felt by Participant 4: Chad

There are a few ways that I accommodate learners with ADHD. I try to limit the distractions by choosing the ADHD learners position in the classroom, very carefully. He or she, should be far away from the door. Preferably close to the front of the class; away from the other learners who have behaviour problems. I also communicate with the learner's parents. Keep them informed of problems that you are experiencing with the learner. If the learner is experiencing lags, this should be addressed. The learner can be enrolled at a school that has an LSEN programme. I tend to document incidents that occur in the class. I write reports and refer the learner to a clinical psychologist. If the condition is treated, then the learner will be able to function in a mainstream classroom."

Participant 5- Tom

"As an educator, I have had experiences where learners have displayed symptoms of ADHD (as depicted in my collage). Learners with ADHD have been inattentive in the classroom, whilst the lesson is in progress. They tend to act silly and distract other learners. They also cannot listen to instructions. For example: they shout out answers without waiting for his, or her turn. I have also experienced learners who have had sudden outbursts of anger, or temper tantrums. For example: if another learner has to touch his or her belongings, the learner with ADHD will become aggressive and disrupt the class. Learners with ADHD show interest in tasks, but have difficulty in finishing it.

I have received much insight of ADHD, through studies in psychology and education, through experiences within the classroom, I have been to one workshop about learning barriers but they did not specifically deal with ADHD and I have also received insight through reading."

I have gained my knowledge of ADHD from experiences within the classroom which has given me valuable expertise into the symptoms of ADHD. Also, by reading resource materials on learners with ADHD. My tertiary background in psychology has provided some considerable understanding of learning disabilities.

With regards to the treatment of ADHD, I have noticed that many parents usually opt for medication as a treatment. I have found however, that some learners tend to become withdrawn, with medication. They also experience a loss of appetite. Also, behaviour modification can be seen as treatment options, whereby learners can be given clear rules and instructions. Using the reward and consequences approach, has helped to shape the learner's

behaviour. Another treatment can be exercise, I have found many learners with ADHD respond well during physical education lessons. They are happier and socialize well with other kids. I have gained this knowledge of the treatment of ADHD through personal and professional experiences and research.

I have faced numerous challenges within the classroom concerning ADHD learners. Lessons need to be constantly adjusted to accommodate or cater for the learners with ADHD. I have to ensure that lessons are interesting so that they remain focused. However, we are very limited with resources. Seating is always being adjusted to keep the learner away from distraction or from being fidgety. This is sometimes, time consuming. Another challenge is that medication has to constantly be monitored and given on schedule. When medication is given too late or too early, it can interfere with lessons. Learners become hyperactive, distracted, or lose their focus. This is stressful. Dealing with anger outbursts is another challenge. It is difficult to manage anger outbursts as well as ensure other learners are engaged. Some learners become physical during anger outbursts.

I often have mixed emotions. At certain times I feel proud, whereby when the learner is engaged, responsive and well behaved, it is a good day. The learner has received the lesson well and I have achieved my lesson objectives. I also feel frustrated at times. Handling large classroom sizes as well as managing a learner with ADHD and the many symptoms for example: inattentiveness or hyperactivity can be challenging under these circumstances. Moreover, I also feel joyful and generous. As an educator, when you see a learner making improvement or achieving a milestone, especially if it's a learner with ADHD or any other learning disability then that in itself, is a reward and the learner deserves to be awarded.

Finally, I try my best to accommodate learner with ADHD in my classroom. My lessons are structured accordingly, to accommodate learners with ADHD. I try to keep it simple and ensure that the ADHD learner is engaged. I also use the behaviour modification system. At the onset of the lesson, instructions are clearly stated, and rules are given. I encourage parent involvement, by liaising with parents closely, to ensure that tasks and projects are completed as ADHD learners have a tendency to leave tasks unfinished. Moreover, I like to introduce my lessons outside of the classroom. An "open" or relaxed environment is conducive to learning for a child with ADHD. They remain focused and are happier, outdoors. Physical education or play time (break) also allows them to engage socially with other kids. The buddy systems

also work well, whereby a learner can be paired up with another learner so as to ensure that the work is done.

5.4.3.5. Participant 6 - Sandy

“My experience of teaching learners with ADHD is a challenge. Learners with ADHD have difficulty sitting still, listening quietly, and concentrating, they are this way, the entire day. Since they are not paying attention, it makes it harder to remember what has been taught in class, or for that lesson. It is my responsibility to accommodate these learners in my classroom. Hence, additional demand is placed on me as an educator when preparing a lesson or teaching in the classroom if the learner with ADHD displays the symptoms of ADHD. The ADHD learner with hyperactivity, is hard to include in a mainstream class, since managing their behaviour is often a challenge. The greatest challenge for me as an educator is that I am not trained to identify or teach learners with ADHD, but I do accommodate them. Therefore, I am doing much research to overcome this challenge. I noticed during the COVID 19 pandemic that it was extremely challenging for learners with ADHD to remain still. It was difficult for them to keep their masks on. They have a new item (the mask), to fidget with.

I have received insights into ADHD from my experiences within the classroom. I have read pamphlets and information booklets provided by the Centre for Disease Control and Prevention, attended a workshop for learners with special needs in education, networking with other educators, as well as assessment centres, and through a module I did during my tertiary education which did not place much emphasis on this prevalent disorder.

My knowledge of the symptoms of ADHD was derived from my experiences of teaching learners with ADHD. I have also read literature regarding ADHD in children and adults. The school I teach at once presented a workshop concerning learning disabilities. However, not much detail was given to the most prevalent, ADHD. I have also filled in the DSM5 on numerous occasions, which aided to my understanding of ADHD and by teaching LSEN classes.

My knowledge of the treatment of ADHD was derived from the literature presented by experts in this field. I received support material from the workshop. I also have done and continue to do research on google regarding ADHD learners. The medication prescribed by specialists has given me an idea on what helps or treats ADHD. I have not received much in detailed training regarding ADHD and for this reason I try to keep up by using the internet and reading about the disorder.

As mentioned before, I have many challenges. The learners with ADHD display highly impulsive behaviours in my class. Also, there is much struggle to complete tasks, because of their inattention. These learners become restless and inattentive resulting in them becoming frustrated which leads them to interfere with others. Sometimes more time is spent on an ADHD learner than the rest of the class. Teaching time is often lost and can be frustrating. Especially since the curriculum is demanding. When they have outbursts or manifest symptoms whilst teaching a mainstream class can be frustrating.

As a teacher who has ADHD learners in my class, I often feel frustrated with the overcrowded classrooms. It is overwhelming to deal ADHD learners especially when they display hyperactivity. I often feel overwhelmed when I am juggling between the needs of the curriculum and dealing with behavioural outbursts at the same time. There are constant interruptions which requires instructions to be repeated. Also, close supervision can be taxing.

Due to the prevalence of ADHD in mainstream classrooms, especially in my school, I have looked at various ways, in which I may accommodate ADHD learners in my classroom. I must be consistent in adhering to rules and routines. I must display kindness and patience when dealing with ADHD learners. I also noticed that maintaining a positive attitude helps both the learner and myself. I find myself giving simple rules that has to be maintained and at the same time be consistent as I cannot let a learner who is not ADHD to misbehave as this confuses learners with ADHD (no double standards- one rule for all learners with or without ADHD). I also rearranged their seating plan. Learners with ADHD will be placed in the front of the class to be easily managed by myself. Learners who show hyperactivity will be given extra activities so that they can be gainfully occupied. For learners who are inattentive, I give them lesser activities so that they can complete their work within the timeframe. I also give more time for learners who so require it to complete their tasks. I regularly break down tasks into smaller manageable pieces so that these learners can complete and submit tasks timeously. I always encourage parent involvement.”

5.4.4. Discussion on findings from reflective journals – Theme 2: The experiences that influence the understanding of ADHD

This data production tool explored the reasons for participants enacting their understanding of ADHD in public mainstream classrooms in the way that they do through a reflective process. I have deciphered from their reflective journals, that participants consistently pointed out that their observations and experiences have contributed to their understanding of ADHD. Samo comments: *“observing and experiencing such behaviour in kids, getting to know the different types of learners and catering for their specific needs in my classroom, have helped me in understanding ADHD in the way that I do.”* This confirms that her experiences of teaching ADHD learners in her mainstream classroom, has influenced the way in which she understands the disorder. Furthermore, she observed that mainstream classroom sizes are too big and difficult to accommodate ADHD learners, therefore, *“... the way a child is managed in class, makes a difference to the child’s behavior. A few factors that I have tried and have helped me minimize a child’s behavioral difficulties, is to provide regular varied mental stimulation tasks, knowing and understanding a learner’s background (home and school environment), the learners interests, developing a genuine relationship with the learner and making the learner familiar with me, so that he or she is comfortable to be in my class, having a feeling of belonging.”* Through her reflection of the ways in which she accommodates ADHD learners in her class, it is evident that she has evaluated and assessed the best ways, to accommodate them.

Moreover, Samo stated that *“by observing learners with ADHD, I have also learnt that their academic needs vary. Whilst Sahil is academically inclined and learns easily through theory, Liam learns best verbally and Thando learns best through creativity. These learners’ needs differ from each other, in and out of the classroom”*, which may imply that her experience with Sahil, Liam and Thando, has given her a sense of how she could cater for the various needs of learners. Additionally, Samo mentioned *“...despite taking medication to enable them to continue with their academic work ...”*, also implies that her knowledge of the treatment, was developed through the administration of medication to her ADHD learners.

Similarly, Ricco had also expressed that his experiences, has influenced his understanding of ADHD. This is evident in Ricco’s journal, as he provided specific experiences that contributed to his understanding. His lack of understanding regarding the containment of learners with learning disorders, has prompted him to begin research and his B.Ed. Honours in educational

psychology. He expressed that: *“The practical experience allowed me to better understand the theory- therefore to better understand the behaviours I was seeing.”* Furthermore, attending workshops, teaching LSEN learners, completing referral forms, parent interviews for learners who needed psychological assistance and special class placements, and attempts of being inspirational, to bring about the look of “eureka”, had influenced his understanding of ADHD.

Functionally, it seems that Ricco’s understanding of ADHD has been enacted due to the struggle of managing ADHD learners. He therefore had a vested interest in expanding his knowledge, by enrolling for postgraduate studies, completing short courses at Embury, engaging in research, attending workshops, and interacting with concerned parents.

Kally expressed the many challenges of being a teacher to ADHD learners. These challenges will be discussed in lieu of the theoretical framework at the end of this section. Like the other participants, Kally expressed that her experiences have influenced the way in which she understands ADHD. Furthermore, she specifically states that: *“I have received insights into ADHD through various ways. My experience with teaching LSEN (learners with special needs) learners, in the previous school that I worked at. I have also gained much insight from transference skills workshops attended on autism and other learning disabilities. Another way, was from my personal experiences with my two children, who are on the spectrum and the knowledge I have gained through research. Moreover, my experience with teaching ADHD learners and by observing the manifestation of ADHD, has contributed to ways in which I received insights of ADHD. With regards to the symptoms of ADHD, I have gained this knowledge from my experiences of teaching ADHD affected learners.”* Therefore, it is evident that her understanding of ADHD, was enacted due to her experiences. Moreover, her understanding of accommodating ADHD learners in the way she does, is influenced by the manifestation of ADHD in her mainstream classroom.

Chad also expressed in his journal, that his experiences are the reasons for enacting the understandings of ADHD in the way that he does. He states that *“Much of my knowledge that I have is through my experience of working with these learners, who are ADHD, attending workshops and reading”* Chad expressed that *“I did not know what was wrong, but I put it down to the learners having some problems. As a result, I was never very harsh with my learners. I treated them with love. It was only much later, that I attended a workshop and for the first time, this condition that I had seen in my classroom, was identified as a real problem. I then read up whatever literature I could find.”* Evidently, Chad enacted understandings of

ADHD through a workshop that he had attended. He was unable to decipher the reasons for the manifestation of ADHD at first.

Chad's collage represented more of the inattentive symptom of ADHD. When I analysed his response, I assumed that he had only experienced the inattentive symptom in his mainstream classroom. Chad confirms my assumption, where he stated: *"I had already seen all the symptoms over the years. Inability to pay attention for a length of time – very limited attention span and often takes very long to complete even a short task. In some instances I have found that this problem can be so severe, that even when I am giving the learner individual attention in a classroom, when we are alone with very few distractions – the learner still struggles to focus on the task."* Additionally, Chad understands that medication, as one of the treatment options, works well, as he states that: *"in my experience in working with these learners, I have seen repeatedly, how remarkably well the medication works."*

Tom stated that his tertiary education in psychology and education, his experiences of the manifestation of ADHD in his classroom and attending a workshop, has given him adequate understanding regarding ADHD. The reason for enacting an understanding, regarding the accommodation of ADHD, is influenced by way ADHD is played out in her classroom. Tom is aware that parents opt for medication as a treatment option, but he understands that medication is not the only treatment. He states *"I have found; however, some learners tend to become withdrawn with medication. They also experience a loss of appetite. Also, behaviour modification can be seen as treatment options, whereby learners can be given clear rules and instructions. Using the reward and consequences approach, has helped to shape the learner's behaviour. Another treatment can be exercise, I have found many learners with ADHD, respond well during physical education lessons. They are happier and socialise well with other kids. I have gained this knowledge of the treatment of ADHD through experiences and research."*

According to Kendall (2008), the reward and consequences approach requires manipulating environmental events following a specific behavior to alter the frequency of that behaviour. DuPaul and Weyandt (2006) present that numerous consequence-based approaches have been analysed for ADHD learners containing contingent positive reinforcement, response cost, and self-management interventions. Evidently, from observing the different treatment options, Tom has a better understanding of which works the best.

Sandy expressed that her experience of teaching ADHD learners is challenging. She mentions that: *“The greatest challenge for me as an educator, is that I am not trained to identify or teach learners with ADHD, although I accommodate them. Therefore, I am doing much research to overcome this challenge.”* Evidently, from this quote, it can be ascertained that Sandy had to develop an understanding of ADHD, through her own research. Due to finding it challenging to accommodate ADHD learners, she expressed that she gained an understanding of this disorder, through *“reading pamphlets and information booklets provided by the Centre for Disease Control and Prevention, attended a workshop for learners with special needs in education, networking with other educators, as well as assessment centres, and through a module I did during my tertiary education.”*

The participants in this study presented numerous forms of manifestation of ADHD in their mainstream classrooms. The theoretical framework that underpinned this study (as discussed in Chapter Three) provided a great amount of understanding regarding the reasons for the manifestations of ADHD. Participants expressed that learners with ADHD, are disruptive in the classroom. They are “easily distracted, have no control over their thought and actions, cannot seem to sit still, fidgety and speak out aloud”. Specifically, Kally expressed that: *“they are easily distracted by the other learners and the classroom environment. Throughout the day they will be swinging on their chairs or tapping their pens or fingers on the table. Learners with ADHD, tend to blurt their thoughts out before others have finished speaking.”* In stating so, Schachar and Logan (1990, pp. 710-720) discuss that “failure to inhibit (or disinhibition) in children might result in behaviors [sic] such as responding before the task is understood, answering before sufficient information is available, allowing attention to be captured by irrelevant stimuli (i.e. distractibility) or failing to correct obviously inappropriate responses.” According to Barkley (1990), ADHD impacts the executive functions, since the initial act of self-regulation must be the inhibition of reactions.

The reflection made by Samo states that *“Some well-known symptoms I have experienced in an ADHD child, is that the child cannot seem to sit still, is very fidgety, speaks out of turn or blurts out answers in class without raising his/her hand, does not complete their homework and is daydreaming when the educator is giving instructions.”* Barkley (1994; 1997) provides insight of these manifestation as he states that learners with ADHD have a weakened sense of retrospection, forethought and self-consciousness, which ascends from working memory. The ability to represent events in their proper chronological order, is regarded as a function of working memory.

Participants also express that ADHD learners are forgetful. Barkley's model envisages that deficits in behavioural inhibition often lead to deficiencies in nonverbal working memory. These deficiencies include specific forms of forgetfulness, whereby ADHD affected individuals, find themselves forgetting to do things at certain times. ADHD affected individuals may also experience the deficiency of reduced ability, to establish and perform actions in relation to time (for example, managing time) and abridged hindsight and forethought, resulting in a decrease in the formation of anticipatory action, for future events.

Other symptoms that participants expressed ADHD learners being slow, require individual attention, do not complete work on time, and struggle to follow instruction were. A non-working memory could influence how teachers understand the learner with ADHD in classrooms, as learners may have difficulties processing new information, anticipating their own future behaviour, and understanding the passing of time. Teachers will possibly experience an ADHD learner or learners with a weakened sense of working memory. According to Barkley (1997), there is a delay in internalisation of speech or verbal working memory, in individuals affected by ADHD. Therefore, learners with ADHD face challenges when using self-speech, in self-regulation and they are less likely to devise problem-solving strategies. However, if strategies are devised, ADHD learners will find it difficult to apply the strategies effectively during the performances of tasks.

In learners with ADHD, the privatisation of speech is delayed. This results in a greater public speech (excessive talking), reduced verbal reflection before acting, reduced organised and rule-oriented self-speech, a reduced influence of self-directed speech in controlling one's own behaviour, and problems following the rules and instructions given by others (Barkley, 1997). Therefore, participants are challenged with ADHD learners who are constantly talking, which results in exasperation (as Samo noted, "*the learner that is infuriating and exasperating, who cannot keep quiet, is hyper, who is very fidgety, talks a lot and must be constantly reprimanded and told to do his work, but has no anger outburst*"), and with these learners wanting to move around and failure in following classroom rules. Moreover, Barkley (1997) implies that learners challenged with the following of rules are referred to as having an impaired reconstitution. Reconstitution involves the analysis and synthesis of internally represented information and the behavioural structures associated with that information. In stating such, ADHD learners have challenges with behaviour, where they are expected to abide by rules.

“cannot control his impulsivity and frustration. He gets outraged by his emotions and has anger outbursts and cannot control his thoughts or actions” - Samo

“they shout out answers without waiting for his or her turn. I have also experienced learners who have had sudden outbursts of anger or temper tantrums. For example: if another learner has to touch his or her belongings, the learner with ADHD will become aggressive and disrupt the class” and “Learners become hyperactive, distracted, or lose their focus. This is stressful. Dealing with anger outbursts, is another challenge. It is difficult to manage anger outbursts, as well as ensure other learners are engaged. Some learners become physical during anger outbursts.” – Tom

The above comments from participants are captured in Barkley’s theory, as immature self-regulation of affect, motivation, and arousal. According to Barkley (1997), psychological characterised types of information will have affective, motivational, appetitive, and even arousal states. ADHD learners are not capable of controlling their negative outburst and they are not able to react positively when they are faced with anger, frustration, disappointment, sadness, anxiety, or boredom. Hence, ADHD learners, from time to time, are found to be hyperactive or impulsive, for long periods in their development, than other learners who do not have ADHD. Sadly, if ADHD learners possess problems in self-regulating emotions and motivations, this may impact their motivation, to be active participants in the classroom.

5.4.5. Interviews - Theme 3: Acquiring a better understanding of ADHD

This data production method addressed the following:

Third research question:	Third objective of this study:
How can teachers acquire additional information of ADHD in public mainstream classrooms?	To identify how teachers can acquire additional information of ADHD in public mainstream classrooms.

Interview schedules were set with participants, to gain insights on how their current understandings of ADHD, can be altered. Presented below, are the responses from each participant (transcribed verbatim).

5.4.5.1. Participant 1- Samo

1. Researcher: What do you think would aid teachers in gaining a better and accurate understanding of ADHD?

Samo: *“Learning about ADHD and teaching a child in the classroom, that has ADHD, I believe, is completely different. Teachers should have the knowledge on ADHD, but there should also be some sort of training manual or workshop held, to work with teachers on how to deal with an ADHD learner in the classroom. By doing this, Teachers will not only be able to adapt teaching and learning strategies to enable learners with ADHD, to learn, but to also provide for other needs of these learners in the classroom physically, emotionally, and mentally. Information given to educators regarding ADHD in children, should make provision for the different types of ADHD learners and their needs that differ from each other. This helps the teacher in understanding, that different learners require a different need and therefore, helps the teacher to accommodate for the diverse needs of learners in the classroom.”*

2. Researcher: Are you knowledgeable about the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM 5)?

If yes, explain how you have developed an understanding of the tool.

If no, explain ways in which you could gain knowledge about the tool.

Samo: *“No. My knowledge on the many alleged mental disorders, is not broad enough. In order to gain knowledge about the DSM5 tool, I would first need to research and understand the need for such a tool and when it can and should be used. I would then need a wide horizon of knowledge, on the different mental disorders that exist. I would have to learn how to describe and classify mental disorders. I can do this through research, gaining knowledge from psychologists or psychiatrists and by reading about it.”*

3. Researcher: Do you think that there is enough support offered to teachers regarding ADHD? Explain.

Samo: *“No. Teachers are a valuable source of information in regard to diagnosing and referring this disorder. The teacher is held responsible for creating an environment that is conducive to the successes of children in the classroom. Many teachers have poor overall knowledge on ADHD and how to deal with such disorders, when faced in the classroom, but are expected to deliver and fulfil expectations without any support from the SBST or DBST. Also dealing with ADHD learners, can be mentally and emotionally draining for many teachers, however no such support is given to educators when dealing with such kids in the*

classroom. Teachers are still expected to give of their best on their own and achieve results that the SBST/DBST expects.”

4. Researcher: Suggest additional ways in which we can assist teachers to develop an understanding of ADHD and ways in which teachers can embrace these learners, after they have developed a better understanding of ADHD.

Samo: *“Provide a hands-on curriculum that enables teachers to understand and fulfil the needs of an ADHD learner. When a child is ADHD and a teacher is not made aware of this, explain to the teacher what ADHD is and how it affects kids in different ways. Parental involvement- Parent support is crucial in achieving success with ADHD children. Parents must communicate with teachers on how ADHD impacts their child informing the teacher of what he or she is most likely to experience in the class. Previous teachers must share strategies that have and have not worked on these learners. Once a teacher has developed a better understanding of ADHD, he/she must now accommodate for these learners in the classroom. The teacher must cater for the needs of these learners. The educator can form a relationship with the learner enabling him/her to understand the learner better whilst also creating a familiar bond with the learner, making the learner feel a sense of belonging. Teachers must understand the child’s hidden disability along with its behaviours and challenges. To embrace these learners, teachers need to reach these learners on a meaningful level, focus on the learner’s strengths and inspire and motivating the learner.”*

5. Researcher: From being a participant in this study, what would you now do differently, when teaching ADHD learners?

Samo: *“When I am made aware that a child is ADHD, I will first figure out the learners needs in the classroom. I will find out the strengths and weaknesses of the learner in order to understand him/her and cater for the learners needs. I will first understand the different characteristic traits in the learner example academic ability, emotional needs etc. and then adjust and prepare my lessons to accommodate for these learner’s needs whilst also catering for other learners needs in my classroom. I will provide structure for these learners as learners with ADHD function best in a structured classroom. I will help shape these learner’s behaviour. I cannot change their behaviour, but I can help teach these learners how to react in situations and look for gradual effect. I will discover what the learner responds to and what works for the ADHD learner and what does not, using these strategies to build, on the learner’s strengths.”*

5.4.5.2. Participant 2- Ricco

1. Researcher: What do you think would aid teachers in gaining a better and accurate understanding of ADHD?

Ricco: *“White Paper 6 deems it necessary for all mainstream classes to be inclusive, but educators were not trained to cope with all that comes, with inclusive education. Therefore, there needs to be training courses/workshops that are more in-depth in nature, instead of the basic workshops that are currently being done, by the Department of Education. They should take place over a number of days, instead of a couple of hours and should have some practical aspect to it. Should be mandatory for all educators to attend.”*

2. Researcher: Are you knowledgeable about the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM 5)?

If yes, explain how you have developed an understanding of the tool.

If no, explain ways in which you could gain knowledge about the tool.

Ricco: *“Yes, I think I would be fairly knowledgeable from being engaged with it over the years. However, as I am not a health professional, I would not be at liberty to diagnose.”*

3. Researcher: Do you think that there is enough support offered to teachers regarding ADHD? Explain.

Ricco: *“No. Because class sizes are still far too big and smaller classes would allow educators, to reach and support every child and not all educators are afforded the opportunity to attend the relevant workshops.”*

4. Researcher: Suggest additional ways in which we can assist teachers to develop an understanding of ADHD and ways in which teachers can embrace these learners, after they have developed a better understanding of ADHD.

Ricco: *“I would think, ongoing training and outreach programmes by special schools/educators. Also, formation of Professional Learning Communities, for support and information and by brainstorming sessions at the school level, to handle issues and difficulties that educators may be experiencing.”*

5. Researcher: From being a participant in this study, what would you now do differently when teaching ADHD learners?

Ricco: *“As a manager, I probably would engage in more conversations with these learners’ form/subject educators. Offer them skills training and greater guidance.”*

5.4.5.3. Participant 3- Kally

- 1. Researcher: What do you think would aid teachers in gaining a better and accurate understanding of ADHD?**

Kally: *“I think workshops and research that I presented by therapists concerning ADHD would aid a better and accurate understanding of ADHD for teachers.”*

- 2. Researcher: Are you knowledgeable about the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM 5)?**

If yes, explain how you have developed an understanding of the tool.

If no, explain ways in which you could gain knowledge about the tool.

Kally: *“No, I have not completed the Diagnostic and Statistical Manual of Mental Disorders document. I will be able to look it up by doing research.”*

- 3. Researcher: Do you think that there is enough support offered to teachers regarding ADHD? Explain.**

Kally: *“Unfortunately, there is not enough support offered to teachers. I feel that specialists in this field and therapists, should present workshops on the different ways and techniques of dealing with ADHD learners.”*

- 4. Researcher: Suggest additional ways in which we can assist teachers to develop an understanding of ADHD and ways in which teachers can embrace these learners, after they have developed a better understanding of ADHD.**

Kally: *“Workshops, research material and presentations on tried and tested techniques.”*

- 5. Researcher: From being a participant in this study, what would you now do differently when teaching ADHD learners?**

Kally: *“I have now learned that if clear and concise instructions are reinforced regularly it would be easy to manage ADHD learners. I also would like to review my classroom and create an environment that will not distract ADHD learners. I will also need to revise extending the due dates for projects and assignments.”*

5.4.5.4. Participant 4- Chad

- 1. Researcher: What do you think would aid teachers in gaining a better and accurate understanding of ADHD?**

Chad: *“A compulsory module at university level, to equip the teacher to cope. Also, professional development workshops, for those who are already in the profession.”*

- 2. Researcher: Do you think you are able to successfully complete the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM 5)?**

If yes, explain how you have developed an understanding of the tool.

If no, explain ways in which you could gain knowledge about the tool.

Chad: *“Yes, I have developed an understanding of this tool through a little engagement.”*

- 3. Researcher: Do you think that there is enough support offered to teachers regarding ADHD? Explain.**

Chad: *“Definitely not enough support for educators. Resources are so limited, and it also takes months, before the parents get an appointment at the state facility.”*

- 4. Researcher: Suggest additional ways in which we can assist teachers to develop an understanding of ADHD and ways in which teachers can embrace these learners, after they have developed a better understanding of ADHD.**

Chad: *“More workshops and hands-on assistance, offered to educators”*

- 5. Researcher: From being a participant in this study, what would you now do differently when teaching ADHD learners?**

Chad: *“Try my best to refer learners showing symptoms of ADHD as soon as possible, so that they can be diagnosed, and treatment can be carried out timeously.”*

5.4.1.1. Participant 5- Tom

- 1. Researcher: What do you think would aid teachers in gaining a better and accurate understanding of ADHD?**

Tom: *“I think there should be more workshops which focus solely on learners with ADHD.”*

- 2. Researcher: Are you knowledgeable about the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM 5)?**

If yes, explain how you have developed an understanding of the tool.

If no, explain ways in which you could gain knowledge about the tool.

Tom: *“No, I have not completed this tool. I could gain information about it from the internet or if need be, get a specialist to explain this to me, or someone who has already completed the document.”*

- 3. Researcher: Do you think that there is enough support offered to teachers regarding ADHD? Explain.**

Tom: *“No, there are few, if not no workshops offered to assist teachers in managing learners that have ADHD. Approaches and strategies used within the classroom, is basically trial and error. I also feel that there is a lack of parent involvement.”*

- 4. Researcher: Suggest additional ways in which we can assist teachers to develop an understanding of ADHD and ways in which teachers can embrace these learners, after they have developed a better understanding of ADHD.**

Tom: *“Workshops, and maybe internet reading. Workshops should be conducted by health care professionals. A better understanding by educators, will allow for lessons to be structured, to accommodate him or her, as well as better knowledge, means understanding the ADHD learner better.”*

- 5. Researcher: From being a participant in this study, what would you now do differently when teaching ADHD learners?**

Tom: *“I would use more behaviour modification techniques, for example: exercise or the reward and punishment method, classroom duties, as I feel it improves the child’s self-esteem.”*

5.4.1.2. Participant 6- Sandy

- 1. Researcher: What do you think would aid teachers in gaining a better and accurate understanding of ADHD?**

Sandy: “Workshops, literature, documents or research material by experts in this field and the dissertation presented by Mr Lucas Pillay would aid teachers in getting a better understanding of ADHD.”

- 2. Researcher: Are you knowledgeable about the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM 5)?**

If yes, explain how you have developed an understanding of the tool.

If no, explain ways in which you could gain knowledge about the tool.

Sandy: “Yes, I have used it as a guide when referring learners for assessment.”

- 3. Researcher: Do you think that there is enough support offered to teachers regarding ADHD? Explain.**

Sandy: “No, learners with ADHD are included in mainstream schools, but they are not given the proper support to accommodate these learners. We have to engage with stakeholders, parents and SMT, to manage these learners. Those with learning difficulties, attend the LSEN programme offered at school.”

- 4. Researcher: Suggest additional ways in which we can assist teachers to develop an understanding of ADHD and ways in which teachers can embrace these learners after they have developed a better understanding of ADHD.**

Sandy: “Campaigns, social media pages with relevant information, adapt lesson plans to suit learners with ADHD, behaviour modification techniques, which must include clear directions and commands, reinforcement of commands and rules and research material would be seen as additional ways to aid teachers, to understand and embrace ADHD learners.”

- 5. Researcher: From being a participant in this study, what would you now do differently when teaching ADHD learners?**

Sandy: “I would apply different techniques within the classroom, as well as outside to accommodate learners with ADHD. I also realised that having lessons outside the classroom,

can be more conducive and relaxed for the learner with ADHD. These learners will be able to concentrate better than within the confines of the classroom.”

5.5. Discussion on findings from interviews - Theme 3: Acquiring a better understanding of ADHD.

From the findings, it is evident that participants referred to professional development, as a strategy to acquire a better understanding of ADHD. Teacher professional development is imperative for the teaching and learning process, as it affords teachers an opportunity to grasp new knowledge, skills, practices, and attitudes, to educate learners more effectively (Owusa-mensah, 2008). According to Steyn (2008, p.15), “the purpose of professional development is to improve the quality of education.” Owusa-Mensah (2008) further express that in a changing society, teachers are required to revise their knowledge, skills, and competencies through professional development. These necessary programmes “exposes teachers to content that helps them deepen and contextualize [sic] their knowledge on practices and prepares them to respond to individual learner needs.” (Research Centre 2004, p. 3).

5.5.1. Support offered to teachers

All six participants indicated that there is not enough support offered to them regarding ADHD. Samo mentioned “*Teachers are a valuable source of information in regard to diagnosing and referring this disorder. The teacher is held responsible, for creating an environment that is conducive to the successes of children in the classroom. Many teachers have poor overall knowledge on ADHD and how to deal with such disorders, when faced in the classroom but are expected to deliver and fulfil expectations without any support from the SBST or DBST. Also dealing with ADHD learners can be mentally and emotionally draining for many teachers. However, no such support is given to educators when dealing with such kids in the classroom. Teachers are still expected to give off their best, on their own and achieve results that the SBST/DBST expects.*”

Ricco articulated that “*class sizes are still far too big and smaller classes would allow educators to reach and support every child and not all educators are afforded the opportunity to attend the relevant workshops.*” According to Luningo (2015, p.24), “The Department of Education has taken responsibility for presenting continuing professional development (CPD) workshops, to assist teachers in the General Education Training (GET) band, to improve their skills, however, it has not been possible to train all teachers adequately with the regular support services of the DoE, as changes have been so widespread.”

Tom expressed that *“there are few, if not no workshops offered to assist teachers in managing learners that have ADHD. Approaches and strategies used within the classroom, is basically trial and error. I also feel that there is a lack of parent involvement.”* Sandy also mentioned that *“learners with ADHD, are included in mainstream schools but they are not given the proper support to accommodate these learners. We have to engage with stakeholders, parents and SMT, to manage these learners.”*

Evidently, all participants expressed that there is not enough support offered to teachers, concerning the inclusion of ADHD learners in a mainstream classroom. According to Benton and Benton (2008), relevant professional development is required, as it equips teachers to bring about learner achievement. Therefore, professional development workshops regarding ADHD, may provide teachers with a better understanding, which can result in learner achievement. Villegas-Reimers (2003, p.24) also notes that *“teachers need professional development opportunities, not only because these opportunities promote the recognition of their work as professionals, but also because they provide more opportunities for growth, exploration, learning, and development.”* Villegas-Reimers (2003), discusses that in the past, the only form of professional development offered to teachers, was staff development workshops, or in-service training. This typically involved workshops or short-term courses that afford teachers new information, on specific aspects of their work.

5.5.2. Teachers acquiring a better understanding of ADHD

Participants provided various ways in which teachers can obtain a better understanding of ADHD. In the past, the focus on educational change has been inescapable and persistent, as education systems everywhere have battled to meet the needs of the times. The White Paper 6 and inclusive education, expresses that teachers need to embrace learners who may have ADHD and contain these learners in the classroom. Therefore, an accurate understanding of ADHD is required. Samo articulated that training manuals and workshops pertaining to the inclusion and management of ADHD would provide much knowledge to teachers. She also added that a hands-on curriculum, parent involvement, networking with experienced teachers as Delport and Makaye (2009) confirms that the collaboration between schools to improve teaching and learning can take various forms and building or forming a relationship with ADHD learners, may aid in teachers gaining a better understanding of ADHD.

Ricco expressed about training courses and workshops and she further discusses that these *“training courses/workshops that are more in-depth in nature, instead of the basic workshops*

that are currently being done by the Department of Education. They should take place over a number of days, instead of a couple of hours and should have some practical aspect to it. Should be mandatory for all educators to attend.” Furthermore, she articulates that “*ongoing training and outreach programmes by special schools/educators. Also, formation of Professional Learning Communities, for support and information and by brainstorming sessions at the school level to handle issues and difficulties that educators may be experiencing*” would assist teachers in gaining an accurate understanding of ADHD. Moreover, Kally and Chad expressed similar requests that workshops by specialists and presentations of tried and tested techniques should be made available to teachers. Tom also mentioned that workshops by professionals will assist teachers to get a better understanding of ADHD and it will allow them to better accommodate these learners. Furthermore, Sandy suggested that reading documents or research material and the researcher’s dissertation may aid teachers in gaining a better understanding of ADHD.

It appears from the participants’ responses that the above mentioned methods of teachers gaining a better understanding of ADHD may result in them adapting to reformed teaching and learning strategies, it will enable ADHD learners to reach their potential within a mainstream classroom, teachers can achieve lesson objectives and aims, and the physical, emotional, and mental aspect of ADHD learners can be accommodated in the mainstream classroom. It seems as if teachers require the support to better understand ADHD through the above-mentioned methods.

5.5.3. Teachers’ engagement with the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM 5)

Three of six participants did not engage or have knowledge of the DSM 5. These participants have indicated that they could gain knowledge of this tool through research, information from psychologists or psychiatrists and through research. The other three participants indicated that they are knowledgeable about the tool as they have engaged with it in the past.

5.5.4. Reflection on being a participant in this study

The participants had expressed that this study had allowed them to reflect on how they fulfil their roles as mainstream teachers, whilst teaching learners with special needs. Samo mentioned that she would now try to better understand learners with ADHD, so that she can better accommodate them in her classroom. Ricco articulated that with the knowledge he

gained through his studies, he would like to engage in more conversations with other subject and form teachers, struggling with ADHD learners. Kally expressed that she will ensure that she provides clear and concise instructions, and that she will review her classroom environment and assessments so as to best accommodate ADHD learners. Chad commented that he would refer learners showing symptoms of ADHD, as soon as he can, for timeous diagnosis and treatment. Furthermore, Tom mentioned that he would utilise more modification behaviour to manage ADHD learners, and Sandy commented that she would apply more techniques, to accommodate ADHD learners. Sandy also mentioned that she would try having lessons outside the classroom to evaluate whether it would be conducive for ADHD learners to be active participants. Furthermore, teachers did not express resentment toward ADHD learners, but instead, they tried their best to accommodate them.

5.6. A narrative created from data.

According to Moen (2006, p. 56) narrative research allows the voices of teachers to be heard “through stories of experience as it offers an opportunity to present the complexity of teaching to readers and to stakeholders.” McAllister (2001, p. 350), states that “A narrative can contribute to an understanding of a phenomenon as it provides the opportunity to engage a listener/reader in that experience from a safe distance”. The following narrative was written by the researcher of this study, which is based on the responses from the data production process. The narrative comprehensively expresses teachers’ understanding of ADHD, the way in which they have enacted these understandings, and how their understanding can be altered.

The silent voices of teachers teaching ADHD learners in a mainstream public classroom

As a mainstream teacher at a public primary school in Durban, South Africa, I am often perplexed by the learning barriers, in a considerable amount of learners. As these learners are integrated into the mainstream classroom, it is a challenging task, to incorporate them into the normal activities and tasks, that are included in the curriculum.

The learners in my classes come from diverse socio-economic backgrounds and from different cultures and mindsets. Taking this into serious consideration, I strive to accommodate all learners in the academic experience. However, some of these learners have learning barriers because of a condition called ADHD. This has always been a dire concern in the past few years in the mainstream classroom.

The symptoms of ADHD vary, according to the condition of the mind of the child. Some display anti-social behaviour and many lack a basic understanding of lessons taught. Learners afflicted with this condition also become fidgety and even violent towards their peers. Learners with ADHD often cannot sit still, obey simple instructions, or complete a task. They also tend to interfere with learners that are gainfully occupied in the tasks at hand. This causes major problems in the mainstream classroom. When ADHD learners become aggressive teachers sometimes get injured in trying to quell certain altercations. Many teachers across the board lack the necessary skills to deal effectively with these situations.

There are learners from different race groups at our school and not all children can adapt easily to the different cultural habits. This makes it even more difficult when learners are not properly disciplined in the home. When these learners are ADHD, it definitely compounds the problem.

I am confident that most teachers plan and execute their lessons well in the classroom, but they are not sufficiently trained to deal with learners with ADHD. This is fast becoming a hindrance to successful learning outcomes. A greater portion of teaching time is lost, in disciplining ADHD learners. Getting them to cooperate and finish tasks, is also a contributing factor to the normal learners' education being compromised. Notwithstanding that precious time is spent on repetitive explanations of the lessons to these ADHD affected learners. It is in my strong opinion, that drastic measures need to be taken so as to ensure that teachers have ample knowledge and skills to elevate this problem.

The Department of Education and the respective managers and medical professionals need to get more involved in assisting teachers to overcome this barrier to successful education. The current meetings and training programmes are inadequate to cull this daunting situation. Even experienced teachers are struggling to curb and deal with ADHD in the mainstream classroom. It would have been a great help if ADHD learners were placed in schools that have teachers who are special needs specialists. Unfortunately, this is not the case. Teachers have to deal with psychological and medical problems of learners, which they are inexperienced to handle.

Medications, such as Ritalin, has to be timeously administered to ADHD learners, whilst the other learners are left unattended. Although many schools have an LSEN programme, the time allocated for this is insufficient. Teachers have to deal with ADHD learners, usually in a classroom with fifty other learners. This adds to the frustration of teachers and can lead to depression, in teachers.

Parents need to get more involved in assisting the school, but most of these parents with ADHD children, are in complete denial, or are ignorant of the severity of ADHD.

The senior management, SGB and respective department officials, need to devise plans urgently in order to overcome this grim reality at our public schools. Teachers need to band together and push for something necessary and drastic to be implemented.

This worrying factor of ADHD and finding solutions to the plight of mainstream education, does not lie in the hands of the teacher alone, but it is the responsibility of ALL stakeholders, to put their shoulder to the plough, in order to create a more inclusive learner environment, in the teaching profession.

Yours truly,

The silent voice of a teacher teaching ADHD learners in a mainstream public classroom.

5.7. Chapter conclusion

From the analysis of data, participants portray adequate understandings concerning ADHD as a learning barrier. They have a sound understanding of the symptoms of ADHD. However, it appears that there is some lack of understanding concerning the diagnosis and management of ADHD in mainstream classrooms. This chapter has presented data generated from participants using collages, reflective journals, and interviews. Necessarily, themes and a narrative were developed to decipher the participants' understanding of ADHD. Each response was analysed and supported by relevant literature and the theoretical framework that underpinned this study. The next chapter presents a concluding discussion and implications for future research.

CHAPTER 6

CONCLUDING DISCUSSION AND IMPLICATIONS

6.1. Introduction

The previous chapter presented, analysed, and discussed the data for this study. It is evident that the research questions and the aim of the study, was achieved through the collages, reflective journals, and interviews. Therefore, this chapter aims to conclude the study by presenting the conclusions that have been taken from the findings and by providing implications for policy makers and future research.

6.2. Concluding discussion on findings

The purpose of this study was to explore teacher's understanding of ADHD in public mainstream classrooms. Evidently, teachers encounter many behavioural disorders in a mainstream classroom which includes ADHD. However, there seems to be a considerable lack of understanding concerning certain aspects, under the ADHD umbrella. The data demonstrates that teachers are fully knowledgeable of the symptoms of ADHD, as they experience the manifestations of it on a daily basis. This confirms the finding of Mulholland et al. (2015) that teachers are the most knowledgeable about symptoms. This finding is supported by a number of other South African studies, which have measured teacher knowledge using a variety of teacher samples (Amod et al., 2013; Kern & Seabi, 2008; Perold et al., 2010).

Whilst teachers are aware of the symptoms, findings from this study indicate that teachers have little knowledge of the diagnosis process. It can be seen that teachers are not fully aware of the role that they play in the referral process of ADHD learners. In this case, teachers are faced with learners who are not diagnosed by the healthcare professional and these learners are labelled as ADHD learners and are being managed. Perold, Louw and Kleynhans (2010) confirm this, as they express a substantial lack of knowledge among teachers in certain key areas of ADHD.

It appears that some teachers take the initiative to accommodate these learners, by knowledge gained from experience, research, and tertiary education. Some of the teachers have employed various methods such as classroom and behaviour modification, individual attention, talk therapy, reward and consequence approaches etc., to accommodate, assist, and support learners with ADHD symptoms. This is contradictory to what Pfiffner and Barkley (1998) found. These

authors expressed that teachers often possess inadequate understanding of the characteristics, complexities, and outcomes of ADHD, thus resulting in teachers lacking intervention skills, to assist and support learners affected with ADHD. Evidently, as time passed from 1998 and currently, the prevalence of ADHD, has increased. Therefore, teachers acquired and obtained knowledge, regarding the accommodation and intervention skills to assist and support learners affected with ADHD, and may show adequate understanding in this regard.

Teachers undergo much stress during the process of accommodating ADHD learners and find it time-consuming, as they also have learners who are not ADHD, in their classrooms. Furthermore, teachers are frustrated, overwhelmed, and challenged when they are faced with the manifestation of ADHD. Despite their frustration, it appears that they believe teaching ADHD-affected learners is a benefit to the growth of their teaching skills. Teachers were knowledgeable about the treatment of ADHD for learners who were correctly diagnosed by a healthcare professional. They are aware that medication (specifically Ritalin) is one of many treatment options and the other treatment options being practiced by the teacher for the accommodation of ADHD learners.

Teachers enacted specific understandings of ADHD, due to their experiences and observations in the mainstream classroom. Since teachers articulated that they do not receive enough support regarding ADHD in mainstream classrooms, they had to acquire understanding on their own. Most teachers have received their enacted understandings of ADHD through reading, networking with other teachers and by attending a few workshops. A small number of teachers enacted understanding of ADHD subjectively, by enrolling for short courses and postgraduate studies that dealt with inclusive education. Furthermore, one teacher in particular enacts understanding the way she does, from her experience with two of her own children, who are on the spectrum. Whilst the reasons for enacting these understandings of ADHD are subjective, and may not refer to the whole population of teachers, many are not afforded the opportunity to further their studies.

As Krowski (2009) expresses, the way in which teachers understand ADHD will influence the nature of instruction used in the classroom when required, to carry out specific interventions to aid ADHD learners. This confirms the reasons as to why teachers accommodate ADHD learners in their classroom in the way that they do. Furthermore, to support Krowski (2009), Ford (2007) has argued that evaluating how teachers make sense of ADHD in terms of the

acceptability, effectiveness and rate of change for ADHD classroom interventions may assist to expedite the adoption and use of effective classroom behaviour approaches.

From gathering and analysing the data, it appears that there is a need for teachers' understanding of ADHD to be altered, so that they can have a comprehensive understanding of every aspect of ADHD. It is evident from this study, that teachers are not offered enough support regarding ADHD. Accordingly, ADHD learners are included in mainstream classrooms, however, teachers are not afforded the opportunity to attend comprehensive workshops pertaining to the disorder. Most teachers indicated a strong desire for better training about ADHD and classroom interventions, to assist with educating affected learners. These conclusions confirm the findings by Bornman and Donohue (2013), as they insist that professional development could assist teachers, in gaining a better understanding of ADHD.

Moreover, Sciutto, Terjesen, and Frank (2000), acknowledged that prior experience on teaching an ADHD-affected learner and receiving ADHD-specific training, predicts the understanding teachers have of the condition. Mulholland et al. (2015) confirmed that years of teaching experience, predicts teachers' knowledge or understandings of ADHD (Anderson, Watt, Noble, & Shanley, 2012; Bekle, 2004). Therefore, it can be assumed that the experiences of teaching ADHD learners in mainstream classrooms, can influence the understandings of teachers, concerning ADHD.

Teachers require workshops that are conducted over a few days, and not just a few hours. Presentations done by therapists, literature, campaigns, research materials and support from the Department of Basic Education are needed to acquire a better understanding of ADHD. According to Holtz and Lessing (2002, p. 103), "for teachers to create an environment conducive to successful learning for ADHD-affected learners, it is imperative that they have a sound knowledge of the nature of ADHD and the pedagogical skills, to manage ADHD-type behaviour in the classroom". This can be acquired from the above-mentioned requirements.

6.3. Implications

This study has afforded teachers an opportunity to reflect on their teaching methods and practices, which formed part of their professional development. In doing so, teachers have realised that they require much-needed assistance, regarding the disorder.

Teachers should be afforded the opportunity to interact with health care professionals, so that they may be empowered and well-educated, concerning the disorder. If teachers feel

empowered and well-educated, they might feel more confident in embracing and understanding ADHD learners. If a teacher is well-educated in all aspects of ADHD, then it will be beneficial for the learner and teacher, whereby the learner can be referred for assessment timeously. The learner can then be accommodated effectively and the teacher will be less stressed.

Schools and teachers require easier accessibility to information and proficiency as well as the support and skills that will help them, in understanding ADHD and supporting and accommodating learners who may have ADHD. Schools should get affiliated with higher education and special education resource centres, such as ADHASA (Attention Deficit and Hyperactivity Support Group of Southern Africa). This will provide knowledge and assistance to teachers, as well as the wider community.

The Department of Basic Education could provide teachers with continuous professional development, whereby the latest developments regarding these disorders can be addressed. In this way, teachers can reflect on their practice of teaching ADHD learners and make regular improvements. Even though the Department of Education makes efforts to conduct yearly workshops, it would be worthwhile to offer hands-on assistance in mainstream classrooms, that include differentiated assessments and activities, generated by the special-needs department. By doing this, ADHD learners will be effectually included in a mainstream classroom, as deemed by White Paper 6. Thus, whilst teachers employed their own approaches and accommodation methods, it may impact the teaching and learning process, within the mainstream classroom as it comprises of both ADHD learners and learners who are not ADHD. Therefore, the Department of Basic Education can further assist teachers, by providing other effective management tools and skills, that will promote inclusivity amongst learners.

If teachers are given the opportunity to discuss the methods and classroom management techniques in conference with other teachers, healthcare professionals and special-needs educationists, it would be beneficial. In saying so, within this conference, teachers can discuss their experiences, understandings and approaches, with one another. This decision can be made by circuit managers or principals.

It seems that teacher-training institutes do not fully equip teachers when it comes to understanding the different disorders. Thus, teacher training institutions should introduce compulsory modules, that deal with learning disorders, so that novice teachers may be equipped, to embrace learning disorders in the classroom.

Parent involvement may play a major role in assisting teachers with ADHD. The parent plays a greater role than the teacher and the Education Department. Parents who have ADHD children should have a vested interest to assist their children with additional treatment options. The parent can also ensure that all relevant work, is being completed. The teacher and parent must communicate and work together. Future research should further establish ways to achieve parent involvement. This study was conducted in a public primary school in relevance to this subject. Further studies may also be conducted in secondary schools, to determine how secondary educators understand ADHD and the ways in which they manage this current situation.

6.4. Limitations of the study

The limitations of this study include:

- This study utilised purposive sampling as a method for the selection of six participants which increases ambiguity of whether the selected sample embodies the entire teacher body population, resulting in “are also not generalizable [sic] from a non-random sample” (Neuman, 2006, p. 768).
- Whilst enough saturation of the data was generated and the objectives of this study, was reached, additional participants may have offered supplementary information on their understanding of ADHD in a mainstream classroom.
- Due to the COVID-19 pandemic it was extremely difficult to generate data, participants may have felt overburdened.

6.5. Conclusion

Clearly, the role of teachers in supporting, accommodating, and assisting all learners with learning barriers, cannot be overstated. Undoubtedly, teachers play an essential role in observing, identifying, and referring learners who exhibit ADHD behaviour, for assessment. This is done so that these learners can be diagnosed and treated timeously. For this to take place, teachers are required have a sound understanding of every aspect of ADHD. Hence, this study explored teachers’ understanding of ADHD, in public primary mainstream classrooms. It deciphered reasons as to why teachers have enacted understandings of ADHD, in the way that they do, and it focused on how teachers can alter their understanding. The results demonstrate that teachers possess adequate understanding of the symptoms of ADHD. The data

has also shown that teachers portray a reasonable amount of understanding concerning the treatment of the disorder. The accommodation of ADHD learners is well-executed by teachers, in their mainstream classrooms. However, there is a lack of understanding regarding the full diagnostic process. Moreover, teachers have enacted their understanding due to their observations and experiences of the manifestation of ADHD, in their mainstream classrooms. Notably, the data produced through this study displays the need for professional development by teachers, to acquire a better and more accurate understanding of ADHD. Whilst teachers are confronted with this challenge of embracing learners with special needs, in the mainstream schooling system, teachers showed no resentment towards these learners.

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APPENDIX A

LETTER TO THE PRINCIPAL



UNIVERSITY OF
KWAZULU-NATAL
INYUVESI
YAKWAZULU-NATALI

DEAR: PRINCIPAL

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH

My name is Mr. Lucas Pillay and I am a Master of Education (M.Ed.- Educational Psychology) student at the University of KwaZulu-Natal, Edgewood Campus. I hereby request your permission to use your institution and educators to conduct research. The title of my research is: *“Teachers’ understanding of Attention Deficit Hyperactivity Disorder in public primary mainstream classrooms: A Narrative Inquiry”*

The main purpose of this study is to:

- Explore teachers’ understanding of *Attention Deficit Hyperactivity Disorder* in public primary mainstream classrooms.

I know that confidentiality is very important to you. Therefore, a pseudonym (*Champion Primary School*) will be utilized within this study to protect the identity of the school and its educators. All information that is gathered will be used for the purpose of the research study and will be kept in a safe place at the University of KwaZulu-Natal for a period of five years. Thereafter, the documents containing the research data will be destroyed. The findings of the study will help add to the existing knowledge of teachers’ understanding of ADHD in public primary mainstream classrooms. The research study requires data collection activities such as a collage, reflective journal and an interview with each participant. Moreover, I will meet with participants for 1-2 hours per day for four days upon commencement of the data collection process. The data collection process will not interrupt or disadvantage the teaching and learning at your institution. Furthermore, an application for permission to conduct research in KwaZulu Natal Department of Education institutions has been completed and sent to Sibusiso Alwar via

mail. The study is supervised by **Dr. V. Jairam** who is a Doctor in Education at the School of Education, UKZN. Dr. V. Jairam can be contacted telephonically on **031 260 1438**.

If you have any questions relating to the rights of research participants, you can contact Mr. Premlall Mohun who is a senior administrative officer in UKZN Humanities and Social Sciences Research Ethics Office on 031 260 4557.

If you require any other information about this study upon its completion, kindly contact the researcher

Mr. Lucas Pillay (213505629) on **071 330 7097** or via email;

LucasPillay@gmail.com 213505629@stu.ukzn.ac.za

Thank you for your assistance.

Yours Sincerely,

Mr. Lucas Pillay



PRINCIPAL DECLARATION

I, _____ (full name/s of Principal) hereby grant permission to the researcher to conduct research in my school. I understand that participants have willingly agreed to participate in this research study and that they are at liberty to withdraw from the research study at any time, so should they desire. I also understand that the name of the school, name of the participant and their responses will be kept confidential.

I give permission for the use of the following record devices during the group sessions and data production process:

	Willing	Not willing
Audio recording		
Photographic equipment (if need be)		

Signature of Principal

Date

APPENDIX B
LETTER TO THE PARTICIPANT
INFORMATION SHEET AND CONSENT FORM



**UNIVERSITY OF
KWAZULU-NATAL**

**INYUVESI
YAKWAZULU-NATALI**

DEAR: PROSPECT RESEARCH PARTICIPANT

RE: REQUEST FOR PERMISSION TO PARTICIPATE IN A RESEARCH STUDY

1. Nature of the Research Study

My name is Mr. Lucas Pillay and I am a Master of Education (Educational Psychology) student at the University of KwaZulu-Natal, Edgewood Campus. I hereby request you to be a research participant in my research study. The title of my research is: “*Teachers’ understanding of Attention Deficit Hyperactivity Disorder in public mainstream classrooms: A Narrative Inquiry*”

The main purpose of this study is to:

- Explore teachers’ understanding of Attention Deficit Hyperactivity Disorder in public mainstream classrooms.

I know that confidentiality is very important to you. All information that is gathered will be used for the purpose of the research study and will be kept in a safe place at the University of KwaZulu-Natal, Edgewood campus, for a period of five years. Thereafter, the documents containing the research data will be destroyed. Your confidentiality and anonymity are guaranteed. At any given point in time, you can withdraw from the study and will not be penalized for taking such action.

Your involvement is purely for academic purposes only, and there are no financial benefits involved. As a participant, you are invited to engage in the following activities as part of the data generation. The data generation methods utilized will be a reflective journal, interviews

and arts-based methods referring to a collage inquiry. Moreover, sessions will take place at a convenient place and time. It will not disrupt your day-to-day functioning at your school and will be conducted out of your instructional time.

As a participant, you may contact the researcher or supervisor. The details are below:

Researcher	<p>Name: Mr. Lucas Pillay Student Number: 213505629 Current qualification: B. Ed Honours (Educational Psychology) Pre-qualification: M. Ed - Master of Education (Educational Psychology) Contact Number: 071 330 7097 Email Address: LucasPillay@gmail.com / 213505629@stu.ukzn.ac.za</p>
Supervisor	<p>Name: Dr. Visvaranie Jairam Qualification: Ph.D. Doctor in Education Contact Number: 031 260 1438 Email Address: jairam@ukzn.ac.za</p>

In the event of any problems or concerns/questions you may also contact the UKZN Humanities & Social Sciences Research Ethics Committee, contact details as follows:

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION

Research Office, Westville Campus

Govan Mbeki Building

Private Bag X 54001

Durban

4000

KwaZulu-Natal, SOUTH AFRICA

Tel: 27 31 2604557- Fax: 27 31 2604609

Email: HSSREC@ukzn.ac.za

2. Requirements of Participant

The main requirements of the participant are as follows:

- Participation will be voluntary and subject to informed consent.

- A participant is free to withdraw from the research study at any given point in time.
- Rights of a participant will be safeguarded in relation to the preservation of confidentiality, access to research information and findings, and misleading promises regarding the benefits of the research.
- Anonymity and Confidentiality will be ensured through a coding system to avoid the inclusion of personal identifiers. The participant will not be identifiable when the researcher presents his or her findings. Confidentiality will be maintained in storing and disposing of research findings.
- Any information given by you cannot be used against you. The data collected will be used for the purposes of this research only.
- Each session may take up to two hours and may be split depending on your preference.

3. Protocol for data collection process during the COVID19 pandemic:

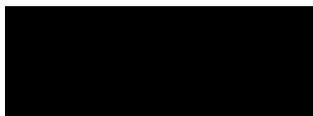
The COVID19 pandemic is affecting the way that we work in proximity. For this reason, many have adapted to work remotely. Initially, my study required face-to-face interaction for data collection through discussions and interviews. However, due to the pandemic, I will now utilize the text-based method of instant messaging (WhatsApp) and recorded video-calling method (Zoom) to obtain data.

- **Collage:** Participants will be required to photograph their collage and send it to the researcher via WhatsApp. A zoom meeting will be scheduled to discuss the collage. (Zoom meeting details will be given to the participant)
- **Reflective Journal:** Participants will be required to photograph their reflections and send it to the researcher via E-mail or WhatsApp.
- **Interview:** A zoom meeting will be scheduled to conduct the interview.

I value your contribution and your safety. Hence, the above protocol to obtain data has been put into place. Please indicate on the next page if you have access to the above methods.

Yours Sincerely,

Mr. Lucas Pillay.



PARTICIPANT DECLARATION

I, _____ (Full name/s of participant) hereby voluntarily agree to participate in this research study. I confirm that I understand the contents of this document and the nature of the research study. I have been briefed about the nature of the research study by the researcher in advance. I understand that I am at liberty to withdraw from the research study at any time, so should I desire. I also understand that the results of this research study will be used for the purpose of the study only, and that my identity will be kept confidential.

I give permission for the use of the following record devices during the group sessions and data production process:

	Willing	Not willing
Audio recording		
Collage Inquiry - and transcribed data		
Reflective Journal - and transcribed data		
Interviews – and transcribed data		

I have access to, and I am willing to utilize the following:

	YES	NO
Internet connection		
A device with a camera (for photography of collage and reflections)		
WhatsApp		
Zoom		
E-mail		

Signature of Participant

Date

APPENDIX C- Ethical clearance certificate from UKZN



02 July 2020

Mr Lucas Pillay (213505629)
School Of Education
Edgewood Campus

Dear Mr Pillay,

Protocol reference number: HSSREC/00001512/2020

Project title: Teachers understanding of Attention Deficit Hyperactivity Disorder in public primary mainstream classrooms: A Narrative Inquiry

Degree: Masters

Approval Notification – Expedited Application

This letter serves to notify you that your application received on 17 June 2020 in connection with the above, was reviewed by the Humanities and Social Sciences Research Ethics Committee (HSSREC) and the protocol has been granted **FULL APPROVAL**

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

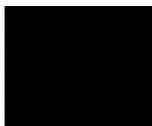
This approval is valid until 02 July 2021.

To ensure uninterrupted approval of this study beyond the approval expiry date, a progress report must be submitted to the Research Office on the appropriate form 2 - 3 months before the expiry date. A close-out report to be submitted when study is finished.

All research conducted during the COVID-19 period must adhere to the national and UKZN guidelines.

HSSREC is registered with the South African National Research Ethics Council (REC-040414-040).

Yours sincerely,



Professor Dipane Hlalele (Chair)

/dd

Humanities & Social Sciences Research Ethics Committee
UKZN Research Ethics Office Westville Campus, Govan Mbeki Building
Postal Address: Private Bag X54001, Durban 4000
Tel: +27 31 260 8350 / 4557 / 3587
Website: <http://research.ukzn.ac.za/Research-Ethics/>

Founding Campuses: ■ Edgewood ■ Howard College ■ Medical School ■ Pietermaritzburg ■ Westville

INSPIRING GREATNESS



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APPENDIX D – Ethical clearance certificate from the DoE KZN



KWAZULU-NATAL PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

OFFICE OF THE HEAD OF DEPARTMENT

Private Bag X9137, PIETERMARITZBURG, 3200
Anton Lembede Building, 247 Burger Street, Pietermaritzburg, 3201
Tel: 033 3921062 / 033-3921051

Email: Phindile.duma@kzndoe.gov.za
Buyi.ntuli@kzndoe.gov.za

Enquiries: Phindile Duma/Buyi Ntuli

Ref.:2/4/8/7000

Mr L Pillay
43 Cranbrook Road
CLAYFIELD
PHOENIX
4368

Dear Mr Pillay

PERMISSION TO CONDUCT RESEARCH IN THE KZN DoE INSTITUTIONS

Your application to conduct research entitled: **“TEACHERS’ UNDERSTANDING OF ATTENTION DEFICIT HYPERACTIVITY DISORDER IN PUBLIC PRIMARY MAINSTREAM CLASSROOMS: A NARRATIVE INQUIRY”**, in the KwaZulu-Natal Department of Education Institutions has been approved. The conditions of the approval are as follows:

1. The researcher will make all the arrangements concerning the research and interviews.
2. The researcher must ensure that Educator and learning programmes are not interrupted.
3. Interviews are not conducted during the time of writing examinations in schools.
4. Learners, Educators, Schools and Institutions are not identifiable in any way from the results of the research.
5. A copy of this letter is submitted to District Managers, Principals and Heads of Institutions where the Intended research and interviews are to be conducted.
6. The period of investigation is limited to the period from 14 September 2020 to 10 March 2023.
7. Your research and interviews will be limited to the schools you have proposed and approved by the Head of Department. Please note that Principals, Educators, Departmental Officials and Learners are under no obligation to participate or assist you in your investigation.
8. Should you wish to extend the period of your survey at the school(s), please contact Miss Phindile Duma/Mrs Buyi Ntuli at the contact numbers above.
9. Upon completion of the research, a brief summary of the findings, recommendations or a full report/dissertation/thesis must be submitted to the research office of the Department. Please address it to The Office of the HOD, Private Bag X9137, Pietermaritzburg, 3200.
10. Please note that your research and interviews will be limited to schools and institutions in KwaZulu-Natal Department of Education.

PINETOWN DISTRICT


Dr. E. Nzama
Head of Department: Education
Date: 14 September 2020

GROWING KWAZULU-NATAL TOGETHER



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APPENDIX E

COLLAGE

This data collection method addresses the following:

First research question:	First objective of this study:
What are the teachers' current understanding of ADHD in public primary mainstream classrooms?	To explore what is the teachers' current understanding of ADHD in public primary mainstream classrooms.

Instruction to participant:

In the form of a collage, put together a series of images that highlight your understanding of ADHD in your classroom.

You required to create a collage based on your understanding of ADHD in a public mainstream classroom. Make use of magazines, newspapers, and the internet to gather pictures, words, or ideas to create your collage. Your collage can be completed on A3 paper (provided).

Time frame for collage:

You will be given two days to complete your collage and you are required to work individually.

Protocol for data collection process during the COVID19 pandemic:

The COVID19 pandemic is affecting the way that we work in proximity. For this reason, many have adapted to work remotely. Initially, my study required face-to-face interaction for data collection through discussions and interviews. However, due to the pandemic, I will now utilize the text-based method of instant messaging (WhatsApp) and recorded video-calling method (Zoom) to obtain data.

Collage: Participants will be required to photograph their collage and send it to the researcher via E-mail or WhatsApp. Discussion on the collages will be done via zoom.

Completion of collage:

Once the collage has been complete, I will have an unstructured interview with you to discuss your collage. The unstructured interview will be audio recorded and at a later stage will be transcribed.

The research participants will be provided with the following prompts when undertaking the collage:

- Please explain the meaning of your collage. (Each representation)
- Where have you included the symptoms of ADHD?
- Where have you included diagnosis and treatment of ADHD?
- If you had to sum up your understanding of ADHD by just one picture or word, which would that be?
- Which parts of the collage represents you as being a teacher of an ADHD learner/s?
- Whilst creating your collage, was there anything that added to your understanding of ADHD learners?

APPENDIX F

Reflective Journals:

This data collection method addresses the following:

Second research question:	Second objective of this study:
Why do teachers enact these current understandings of ADHD in public primary mainstream classrooms in the way that they do?	To explore why teachers have enacted these understandings of ADHD in public primary mainstream classrooms in the way that they do.

A notebook will be presented to each participant to *reflect on their experiences of teaching ADHD learners in a public primary mainstream classroom to determine why they have enacted these understandings in the way that they do.* This will serve as a type of diary where the participants will make regular entries.

Time frame for reflective journals:

Participants will be given a time frame of one to two weeks to complete their reflections.

Protocol for data collection process during the COVID 19 pandemic:

The COVID 19 pandemic is affecting the way that we work in proximity. For this reason, many have adapted to work remotely. Initially, my study required face-to-face interaction for data collection through discussions and interviews. However, due to the pandemic, I will now utilize the text-based method of instant messaging (WhatsApp) and recorded video-calling method (Zoom) to obtain data.

Reflective Journal: Participants will be required to photograph their reflections and send it to the researcher via E-mail or WhatsApp.

Structure of the reflective journal:

Reflective journal

Participant: _____

The aim of this journal is to keep a record of your thoughts, notes and reflections about your experiences of teaching ADHD in a public primary mainstream classroom to determine why you have enacted your understanding of ADHD in the way that you do.

You may use the following guidelines:

- Reflect on your experiences of teaching ADHD in a public primary mainstream classroom to determine why you have enacted these understandings in the way that you do.
- Reflect on how you received insights of ADHD?
- Reflect on your knowledge of the symptoms of ADHD. How did you gain this knowledge?
- Reflect on the treatment of ADHD. How did you gain this knowledge?
- Reflect on some of the challenges that you are faced with having an ADHD learner in your class?
- Reflect on the emotions felt when teaching ADHD learners in your public mainstream classroom.
- Reflect how you accommodate ADHD learners academically and physically within the public primary mainstream classroom.

APPENDIX G

Interview schedule:

This data collection method addresses the following:

Third research question:	Third objective of this study:
How can teachers acquire additional information of ADHD in public mainstream classrooms?	To identify how teachers can acquire additional information of ADHD in public mainstream classrooms.

<i>Teachers' understanding of Attention Deficit Hyperactivity Disorder in public primary mainstream classrooms: A Narrative Inquiry</i>	
Date of interview:	
Length of interview:	
Participant's pseudonym:	
Grade:	
Number of learners in a classroom:	

Main question: *How can we change the current understandings of ADHD?*

Sub questions:

1. What do you think would aid teachers in gaining a better and accurate understanding of ADHD?
2. Do you think you are able to successfully complete the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM 5)?
If yes, explain how you have developed an understanding of the tool.
If no, explain ways in which you could gain knowledge about the tool.
3. Do you think that there is enough support offered to teachers regarding ADHD?
Explain.
4. Suggest additional ways in which we can assist teachers to develop an understanding of ADHD and ways in which teachers can embrace these learners after they have developed a better understanding of ADHD.
5. From being a participant in this study, what would you now do differently when teaching ADHD learners?

Protocol for data collection process during the COVID 19 pandemic:

The COVID 19 pandemic is affecting the way that we work in proximity. For this reason, many have adapted to work remotely. Initially, my study required face-to-face interaction for data collection through discussions and interviews. However, due to the pandemic, I will now utilize the text-based method of instant messaging (WhatsApp) and recorded video-calling method (Zoom) to obtain data.

Interview: A zoom meeting will be scheduled to conduct the interview. Interviews will be recorded and transcribed later on.

APPENDIX H
LETTER FROM EDITOR

GENEVIEVE WOOD

P.O. BOX 511 WITS 2050 | 0616387159

EDITING CERTIFICATE

LANGUAGE EDITING SERVICES

Date: 2020/11/20

This serves to confirm that the document entitled:

**TEACHERS' UNDERSTANDING OF ATTENTION DEFICIT
HYPERACTIVITY DISORDER IN PUBLIC PRIMARY MAINSTREAM
CLASSROOMS: A NARRATIVE INQUIRY**

By

LUCAS PILLAY

213505629

A dissertation submitted in fulfillment of the requirements, for the degree of Master of

Education in the School of Education,

Discipline of Educational Psychology

at

the University of KwaZulu-Natal, Edgewood Campus

has been language edited on behalf of its author, with recommendations for improvement.

Genevieve Wood

PhD candidate

Wits University