THE UNIVERSITY OF QUEENSLAND

AUSTRALIA

Adolescents with Attention Deficit Hyperactivity Disorder: Case Studies of the Academic, Behavioural, and Social Differences Over Time of Five Young People in a Flexible Learning Centre

Linda Houston

A thesis submitted for the degree of Master of Philosophy
at The University of Queensland in August 2010.
School of Education

DECLARATION BY AUTHOR

This thesis is composed of my original work, and contains no material previously published or written by another person except where due reference has been made in the text. I have clearly stated the contribution by others to jointly-authored works that I have included in my thesis.

I have clearly stated the contribution of others to my thesis as a whole, including statistical assistance, survey design, data analysis, significant technical procedures, professional editorial advice, and any other original research work used or reported in my thesis. The content of my thesis is the result of work I have carried out since the commencement of my research higher degree candidature and does not include a substantial part of work that has been submitted to qualify for the award of any other degree or diploma in any university or other tertiary institution. I have clearly stated which parts of my thesis, if any, have been submitted to qualify for another award.

I acknowledge that an electronic copy of my thesis must be lodged with the University Library and, subject to the General Award Rules of The University of Queensland, immediately made available for research and study in accordance with the *Copyright Act 1968*.

I acknowledge that copyright of all material contained in my thesis resides with the copyright holder(s) of that material.

Linda Houston

August, 2010

Statement of Contributions to Jointly Authored Works Contained in the Thesis

None

Statement of Contributions by Others to the Thesis as a Whole

None

Statement of Parts of the Thesis Submitted to Qualify for the Award of Another Degree

None

Published Works by the Author Incorporated into the Thesis

None

Additional Published Works by the Author Relevant to the Thesis but not Forming Part of it

None

ACKNOWLEDGEMENTS

I would like to acknowledge the support received from my advisors throughout the course of this study. Dr. Ian Hay who began the journey with me and assisted in formulating the focus of the study, Dr. Annemaree Carroll, my principal advisor whose expertise in the area was invaluable and helped to guide me, and Dr. Mary McMahon whose skills and knowledge in the area of qualitative research were greatly appreciated. My thanks also to the Christian Brothers and Edmund Rice Education Australia for their faith in my ability to represent their organisation with authenticity and integrity. Most of all my thanks to the young people involved in the study for sharing their stories and allowing me to be involved in their lives.

ABSTRACT

Attention Deficit Hyperactivity Disorder (ADHD) is the most commonly diagnosed disorder in children today and has been the subject of great public and academic debate for over a decade. Whilst much of this debate has focussed on clearly defining the disorder and determining its prevalence, in more recent years, research has begun to focus on successful interventions for overcoming the myriad of poor outcomes experienced by children with ADHD. The majority of intervention research, however, has concentrated on medical and behavioural approaches with very little attention being given to the impact of educational and/or academic interventions. Because children with ADHD are at two to three times greater risk of school failure than their peers without ADHD, it is essential that research focuses on educational approaches within school and classroom environments to address this problem.

The purpose of the present research was to investigate the academic, social and behavioural differences over time of children diagnosed with ADHD in a Flexible Learning Centre through case studies of five adolescents aged 13 to 17 years who, for a variety of reasons, had been excluded from, denied access to, or had chosen to reject mainstream education. Data for the case studies were collected by means of archival records and recollections, naturalistic observations of the young people in the flexible learning environment, and interviews with the young people and their parents to explore the perceptions of themselves over time and to what they attributed any changes that may have occurred. Moreover, participants were administered a series of tests at two time intervals (approximately nine months apart) focussing on academic achievement (the PROBE Reading test, South Australian Spelling test, Test of Whole Number Computation), self-perception (the Self-

Descriptive Questionnaire II) and behavioural outcomes (the Strengths and Difficulties Questionnaire). Using these multiple forms of data collection, within-case and cross-case analyses were adopted to determine themes, trends, and patterns to support or refute the study questions.

Findings from the study indicated that over time there were improvements in the social and behavioural outcomes for the five participants but academic progress was limited. This thesis will explore these and other findings from the study and suggest possible reasons for the findings and implications for future research.

KEYWORDS

attention deficit hyperactivity disorder, alternative education, flexible learning, academic outcomes, social outcomes, behavioural outcomes

AUSTRALIAN AND NEW ZEALAND STANDARD RESEARCH CLASSIFICATIONS (ANZSRC)

170173 50%, 130399 50%

TABLE OF CONTENTS

Declaration i
Acknowledgement ii
Abstract ii
Keywords iii
Australian and New Zealand Standard Research Classifications iii
List of Tables vii
List of Appendices viii

CHAPTER 1 - Introduction 1
Purpose of the Research 2
Context of the Research 2
Significance of the Research 3
Outline of the Thesis 4

CHAPTER 2 - Literature Review - An Overview of ADHD 6
Attention Deficit-Hyperactivity Disorder 6
Defining ADHD: Diagnosis, Characteristics, and Prevalence 7
Theoretical Explanations for the Causes of ADHD 10
Developmental Course of ADHD- Infancy, Middle Childhood, Adolescence 11
Cormorbidity of ADHD 14
Consequences of ADHD: Academic, Behavioural and Social Outcomes 15
Social Outcomes 16
Behavioural Outcomes 17
Academic Outcomes 20
Summary 22
Interventions for the Treatment of ADHD 23
Medical Interventions: Psycho-stimulant Use 23
Behavioural Interventions 28
Educational and Psychosocial Interventions 30
Conclusion 35

CHAPTER 3 - Literature Review – Alternative Education 37
Introduction 37
What is Alternative Education? 38
The Present Study School Setting 46
Staff Selection and Training 55
Staffing at Centre Education Programme 59
Edmund Rice Education Australia 61
Growth of the Flexible Learning Network 61
Conclusion 62

CHAPTER 4 – Methodological Approaches 64
Methodological Approaches 64
Triangulation 67
Explanatory 67
Exploratory 67
Qualitative Data Collection Methods/Strategies 68

Case studies 68
Interviews 69
Participant Observation 69
Qualitative Validity 71
Credibility 71
Transferability 72
Dependability 73
Confirmability 73
Qualitative Data Analysis 74
1. Preparing and Organising the Data 75
2. Exploring and Coding the Data 76
3. Describing Findings and Exploring Themes 76
4. Representing and Reporting Findings 77
5. Interpreting the Meaning of the Findings 77
6. Validating the Accuracy of the Findings 77
Quantitative Data Collection Methods 78
1. Deciding on the Participants 78
2. Obtaining Permission to Study Participants 79
3. Identifying the Types of Measures that will Answer the Research Questions 79
4. Locating the Instruments to Use 80
5. Collecting the Data 81
Quantitative Data: Reliability and Validity 81
Prose Reading Observation, Behaviour, and Evaluation of Comprehension (PROBE) 82
South Australian Spelling Test (SAST) 83
Test of Whole Number Computations 83
Self-Descriptive Questionnaire- II (SDQ-II) 84
The Strengths and Difficulties Questionnaire (SDQ) 84
Conclusion 84

CHAPTER 5 – General Methods 86
Participant One – Gary 86
Participant Two – Andy 87
Participant Three - Sean 87
Participant Four - Billy 88
Participant Five – Paul 88
Quantitative Measures 89
Prose Reading Observation, Behaviour and Evaluation of Comprehension (PROBE) 89
South Australian Spelling Test (SAST) 90
Test of Whole Number Computations 90
Self-Descriptive Questionnaire – II (SDQ-II) 91
The Strengths and Difficulties Questionnaire (SDQ) 92
Qualitative Measures 92
Semi-Structured Interviews 92
Archival Records and Recollections 94
Participant Observations 94
Procedure 95
Data Analysis 98
Conclusion 100

CHAPTER 6 – Case Studies 101
Part 1 – Within-Case Analysis 102
Participant One- Gary 103
Participant Two- Andy 112
Participant Three- Sean 120
Participant Four- Billy 126
Participant Five- Paul 136
Part 2 – Across-Case Analysis 146
Academic Outcomes 146
Social Outcomes 149
Behavioural Outcomes 150
Emerging Themes 152
Unhappiness With Previous Schools 153
Current Connectedness to School Community 154
Improved Relationships 156
Lack of Knowledge About ADHD 156
.....Future Plans and Remaining Challenges 157
Conclusion 158

CHAPTER 7 – General Discusssion 159
Academic Outcomes 159
Social Outcomes 161
Behavioural Outcomes 164
Emerging Themes 165
Limitations of the Study 168
Recommendations for Future Research 170
Concluding Comments 172

REFERENCES 175

LIST OF TABLES

Table 1:	DSM-IV TR Criteria for Diagnosis of ADHD	8
Table 2:	Raywid's Typology of Alternative Education	39
Table 3:	Roderick's Typology of Target Groups	40
Table 4:	Characteristics of Effective Alternative Education Programs/Practices	42
Table 5:	Centre Education Programme Curriculum Statement, 2006	51
Table 6:	Comparison of Mixed Methods Designs	66
Table 7:	Timeline of Study Participation	102
Table 8:	Academic Test Results for Participant 1	108
Table 9:	SDQ-II Results for Participant 1	109
Table 10:	SDQ Results for Participant 1	110
Table 11:	Academic Test Results for Participant 2	116
Table 12:	SDQ-II Results for Participant 2	117
Table 13:	SDQ Results for Participant 2	118
Table 14:	Academic Test Results for Participant 3	123
Table 15:	SDQ-II Results for Participant 3	124
Table 16:	SDQ Results for Participant 3	125
Table 17:	Academic Test Results for Participant 4	132
Table 18:	SDQ-II Results for Participant 4	133
Table 19:	SDQ Results for Participant 4	134
Table 20:	Academic Test Results for Participant 5	141
Table 21:	SDQ-II Results for Participant 5	143
Table 22:	SDQ Results for Participant 5	144

LIST OF APPENDICES

APPENDIX 1	Ethical Clearance from The University of Queensland	192
APPENDIX 2	Gatekeeper Permission from Christian Brothers, Xavier Province	194
APPENDIX 3	Parent/Carer Introduction Letter and Consent Form and Student Introduction Letter and Consent Form	196
APPENDIX 4	Interview Questions for Young People	203
APPENDIX 5	Interview questions for Parents/Carers	205

CHAPTER ONE
Introduction

Over the last decade children and adolescents with Attention Deficit Hyperactivity Disorder (ADHD) have continued to present challenges to service providers in educational settings. These young people are overrepresented in special education and the juvenile justice system and continue to experience poor outcomes in many areas of their lives. In Australia, as in many other countries, the expectation that each child has a need (and a right) to reach optimal potential in physical, mental, and social development is now explicit in policy statements such as the National Child and Young People's Health Policy (Commonwealth Department of Health and Human Services, 1995) yet according to the research young people with ADHD continue to experience poor outcomes (The Australasian College of Physicians [ACP], 2009).

To date there is a vast amount of research concerned with defining ADHD and determining its prevalence with more recent studies focussing on successful interventions. The American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders Fourth Edition (DSM-IV TR) defines ADHD as one of the 'Disruptive Behaviour Disorders', or particularly as a set of 'externalised' behaviour disorders (American Psychiatric Association, 2000). Subsequently much of the research has focussed on behavioural and/or medical interventions with very little attention being given to educational or academic interventions. As young people with ADHD are at two to three times greater risk of school failure than their peers without ADHD (Smith, Waschbusch, Willoughby, & Evans, 2000), it would seem pertinent for research to focus on interventions that occur in educational settings.

Purpose of the Research

The purpose of the present thesis is to contribute to the growing research base in relation to educational interventions for young people with ADHD, with particular focus on a relatively new model of education, flexible/alternative learning. Whilst alternative pathways to educational success have always existed within and alongside our more traditional school settings, in recent years the need for programs/schools that service young people not succeeding in traditional school environments has grown considerably (Aron, 2006). Barkley (1990) found that the suspension and exclusion rates for young people with ADHD were 46% and 11% respectively, with many of these youths and their parents left to seek alternative educational pathways. With high school retention rates dropping globally many educational sectors are exploring and implementing alternative programs in the hope of improving outcomes for young people not experiencing success in mainstream environments (Aron, 2006). The present thesis explored this concept of 'alternative education' with a focus on a particular model being used in Australia, that of flexible learning.

Young people with ADHD are historically overrepresented in settings such as the Flexible Learning Centre, the site of the present study. The present thesis aimed to explore the academic, social and behavioural outcomes for five young people attending a Flexible Learning Centre through a mixed-method research design that involved case-studies. The experiences of five young people in the setting over a nine-month period were explored, and changes that occurred over this time period were investigated, with particular interest given to factors that were attributed to these changes (or lack thereof).

Context of the Research

The research occurred in a Flexible Learning Centre in Brisbane, Australia and focused on five young people who had been diagnosed with ADHD. Flexible learning is a model of

alternative education currently being adopted in Australia which includes aspects such as: small class sizes; individualized approach to curriculum; student input into curriculum; focus on literacy and numeracy; element of choice in all activities, and; priority given to development of respectful relationships (te Riele, 2007). A mixed methods design was used through a case study model in order to achieve an in-depth analysis of the academic, social and behavioural outcomes for young people with ADHD in this particular setting. Both quantitative and qualitative data were gathered in order to validate the interpretations made from the research and to provide a rich narrative discussion of the findings.

The setting for the study had been in operation as an alternative education option since 1983. Over time, the school had changed considerably as referrals and enrolments continued to increase and policies and practices were formalised. Today the school is one of six schools and five mobile programs in Queensland that form the Edmund Rice Education Australia Flexible Learning Centre Network. The network continues to experience increasing numbers of referrals and is currently exploring the possibility of expansion at a National level.

Significance of the Research

While previous research has indicated that young people with ADHD experience poor outcomes in traditional school settings and are frequently suspended or excluded (Barkley, 1990), what remains unknown is the outcomes for these young people when suspended or excluded from school settings. The author of this thesis has worked in a Flexible Learning Centre for 12 years and has observed over time the high numbers of young people with ADHD that attend the centre. It would seem that at a time when flexible learning is moving to becoming established as a viable alternative to mainstream education, it is pertinent to begin to explore the outcomes for young people who attend these settings and how or if they are providing opportunities for young people with ADHD to experience success. Does the growth

of flexible learning as a model support the current policies on children reaching optimal potential, in particular young people with ADHD? If so, then how can the model be replicated in other Australian communities and if not, then what aspects of the model are worth retaining? This thesis, whilst not specifically addressing these questions, will lay a foundation for further investigation into the areas of flexible learning with a focus on young people with ADHD.

Outline of the Thesis

The thesis addressed the following research questions:

- What academic, social and behavioural differences (if any) are evident over time in young people with ADHD who attend a Flexible Learning Centre?
- To what do the young people and/or their parents/carers attribute these differences?
- What implications do the findings provide for educators and researchers of interventions for young people with ADHD?

Chapter One provides an introduction to the study and is followed by a literature review that is divided into two chapters to reflect the two main foci of the study, specifically ADHD and Alternative Education. Chapter Two explores the concept of ADHD as well as the current research findings in relation to outcomes for young people with ADHD and interventions. Chapter Three continues this literature review by exploring the concept of 'alternative education' as a model for providing an overview of academic interventions for young people at risk. The concept of being 'at risk' is broad and will be confined in this study as young people with ADHD. Chapter Four discusses the methodology adopted for the study and the rationale for doing so, whilst Chapter Five outlines the methods employed including participants, procedure, and instruments employed during the course of the study.

Chapter Six presents the findings through an in-depth within- and across-case analysis of participants based on the results of the data gathered during the research. Quantitative data

were gathered from each participant at two points in time, nine months to one year apart, and focussed on academic, social and behavioural measures. In relation to the behavioural measure, the parents/carers of the young people completed questionnaires to broaden the investigation to settings outside of the school. Qualitative data were gathered across the year through recollections, archival records, observations, and a semi-structured interview with each participant and their parent/carer. The variety of data collection methods provided the opportunity to fully explore all aspects under study and to validate the findings. Whilst generalisation of the findings was restricted due to the small number of participants, the rich description achieved of the setting and the participants contributed to the credibility of the findings and the potential for replication of the study.

The final chapter concludes the thesis by discussing the findings in relation to the research base, acknowledging the limitations of the study, and suggesting implications and opportunities for future research. Although based on a limited number of participants, the extensive data gathered and the rich narratives that resulted from analysis of this data may encourage other researchers to follow up on the findings. With flexible learning being a new and emerging concept in education, and with young people with ADHD continuing to perplex educators, the present study provides a sound basis for future research.

CHAPTER TWO

Literature Review: Attention Deficit Hyperactivity Disorder

The present thesis concerns itself with two foci, adolescents with ADHD and flexible learning as a model of intervention for these young people. In order to contextualise the study, research related to the two foci will be reviewed. The present chapter begins by providing an overview of Attention Deficit Hyperactivity Disorder (ADHD), its prevalence in today's society and its likely causes. Following this, a discussion on the consequences of ADHD will occur with particular emphasis on the implications of this condition for adolescents and how it affects their schooling in terms of academic, behavioural and social outcomes. The chapter will conclude with a summary of current interventions. Whilst the present thesis focuses on interventions in an educational setting, exploration of a variety of interventions will be considered including; medical, behavioural, psychosocial, and educational. Through the exploration of these areas an understanding will be developed of the educational issues that exist for adolescents with ADHD and the background to the young people who are the subject of this study.

Attention Deficit Hyperactivity Disorder: Overview

In recent years, ADHD has been a subject of great public attention and concern and is one of the most common neuro-developmental disorders of childhood (American Psychiatric Association, 2000). Children with ADHD have difficulties with staying focussed on a task (unless the task has high intrinsic interest), sitting still, thinking before acting, and, finishing tasks. Evidence suggests that the disorder persists into adolescence and adulthood and if untreated can lead to severe negative outcomes including low self-esteem, antisocial behaviour, academic underachievement, and depression (American Psychiatric Association, 2000).

Defining ADHD: Diagnosis, Characteristics, and Prevalence

ADHD is one of the 'Disruptive Behaviour Disorders' referred to in the DSM-IV TR (2000), as a set of 'externalised' behaviour disorders. These include Attention Deficit Hyperactivity Disorder, Attention Deficit Disorder, Oppositional Defiant Disorder (ODD) and Conduct Disorder (CD). Although many different terms have been used to refer to the disorder e.g., Attention Deficit Disorder (with or without hyperactivity) (DSM III) (American Psychiatric Association, 1980), or Attention Deficit Disorder (predominantly hyperactive/inattentive/impulsive) (DSM-IV TR), for ease of reading, the term ADHD will be used throughout this thesis. Despite the many changes in the name over time, it would appear that ADHD is the most commonly understood and most used term in the literature. One of the most commonly accepted definitions of ADHD is that presented by Barkley (1990):

> *ADHD must be viewed as a developmentally disabling disorder of inattention, behavioural disinhibition, and the regulation of activity level to situational demands. The evidence accumulating in the past ten years has more than proven this initial view to be correct; indeed, it is the only humane perspective on this disorder (p.10).*

Table 1 contains the criteria that must be met within the DSM-IV TR for children to be diagnosed with ADHD. Together with established criteria for diagnosis as described in Table 1, children with ADHD appear to exhibit a wide range of other difficulties in cognitive, developmental, behavioural, emotional, and academic areas (Barkley, 1998a). Despite the heterogeneity of the group, children with ADHD share the chronic difficulties they display with the hallmark characteristics of poor regulation and inhibition of behaviour.

Table 1

DSM-IV TR Criteria for Diagnosis of ADHD

I. Either (A) or (B)

A. Six (or more) of the following symptoms of inattention have been present for at least six months to a degree that is disruptive and inappropriate for developmental level:

Inattention

(a) often does not give close attention to details or makes careless mistakes in school work, work or other activities;

(b) often has trouble keeping attention on tasks or play activities;

(c) often does not seem to listen when spoken to directly;

(d) often does not follow instructions and fails to finish school work, chores, or duties in the workplace (not due to oppositional behaviour or failure to understand instructions);

(e) often has trouble organising activities;

(f) often avoids, dislikes, or doesn't want to do things that take a lot of mental effort for a long period of time (such as school work or homework);

(g) often loses things needed for tasks or activities (eg toys, school assignments, pencils, books or tools);

(h) is often easily distracted;

(i) is often forgetful in daily activities.

B. Six (or more) of the following symptoms of hyperactivity-impulsivity have been present for at least six months to a extent that is disruptive and inappropriate for developmental level:

Hyperactivity

(a) often fidgets with hands or feet or squirms in seat;

(b) often gets up from seat when remaining in seat is expected;

(c) often runs about or climbs when and where it is not appropriate (adolescents or adults may feel very restless);

(d) often has trouble playing or enjoying leisure activities quietly;

(e) is often 'on the go' or often acts as if 'driven by a motor';

(f) often talks excessively.

Impulsivity

(a) often blurts out answers before questions have been finished;

(b) often has trouble waiting one's turn;

(c) often interrupts or intrudes on others (eg 'butts into' conversations or games).

II. Some symptoms that cause impairment were present before age 7 years.

III. Some impairment from the symptoms is present in two or more settings (eg at school/work and at home)

IV. There must be clear evidence of significant impairment in social, school, or work functioning.

V. The symptoms do not happen only during the course of a Pervasive Developmental Disorder, Schizophrenia or other Psychotic Disorder. The symptoms are not better accounted for by another mental disorder (eg Mood Disorder, Anxiety Disorder, Dissociative Disorder, or a Personality Disorder).

Based on these criteria, three types of ADHD are identified:

1. Attention-deficit/hyperactivity disorder, Combined Type: if both criteria 1A and 1B are met for the past six months.

2. Attention-deficit/hyperactivity disorder, Predominantly Inattentive Type: if criterion 1A is met but criterion 1B is not met for the past six months.

3. Attention-deficit/hyperactivity disorder, Predominantly Hyperactive-Impulsive Type: if criterion 1B is met but criterion 1B is not met for the past six months.

(Source: American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision, 2000).

As the most commonly diagnosed neuro-developmental disorder of children, ADHD is estimated to occur in 3 to 5% of school-aged children yet accounts for as many as 30 to 50% of child referrals to mental health services in the United States of America and results in

substantial impairments in peer, family, and academic functioning (Multimodal Treatment Authority [MTA] Cooperative Group, 1999). The Child and Adolescent Component of the Australian National Survey of Mental Health and Well-Being (NSMHW) (Sawyer et al., 2000) found the prevalence of ADHD (as defined in DSM-IV) to be 7.5% of children aged 14 to17 years (Graetz, Sawyer, Hazell, Arney & Baghurst, 2001).

Theoretical Explanations of the Causes of ADHD

While the specific causes of ADHD remain unknown, there is general consensus amongst the medical and scientific community that ADHD is biological in nature and quite probably genetic (MTA Cooperative Group, 1999). Brain imaging studies conducted during the past decade have indicated which brain regions malfunction in patients with ADHD. In 1996, a study conducted by the National Institute for Mental Health (NIMH) found that the right prefrontal cortex (part of the cerebellum) and at least two of the clusters of nerve cells known collectively as the basal ganglia, are significantly smaller in children with ADHD (Barkley, 1998a). Not surprisingly these are the areas of the brain that relate to the regulation of attention. The reasons for these anatomical differences are as yet unknown but researchers suggest that mutations in several genes active in this area of the body may play a significant role (Barkley, 1998a).

Another area of neuro-biological research that has gained significant support in the scientific community in recent years is the neurochemical approach, sometimes referred to as the ‘dopamine hypothesis’ (Zametkin & Liotta, 1998). According to this hypothesis, the neurotransmitter dopamine plays a key role in initiating purposeful movement, increasing motivation and alertness, reducing appetite, and inducing insomnia. Scientists who support this hypothesis believe that the symptoms associated with ADHD are primarily caused by a reduction in the production of dopamine. Further studies in this area have suggested that the

production of the neurotransmitter norepinephrine is also indicated in ADHD. This research forms much of the support basis for the use of psycho-stimulant medication which works to increase dopamine and norepinephrine production (Barkley, 1998a).

Genetic disposition has been postulated as a critical factor in relation to the neurochemical theory. Research to identify abnormal genes has focused on specific genes related to the production and processes pertaining to dopamine (Cook et al., 1995; Smalley et al., 1998). Support for the existence of a genetic component to ADHD has also come from early studies focusing on inheritance in families. Research has found that between 10 and 35 percent of children with ADHD have a first-degree relative with ADHD and approximately one-half of parents with ADHD have a child with the disorder (Biederman, Faraone, Mick, & Lelon, 1995). Furthermore, twin studies have shown that when ADHD is present in one twin, it is significantly more likely to be present in the other (Goodman & Stevenson, 1989) whether or not the twins were raised in the same household, which appears to refute claims of a causal relationship between ADHD and the family environment.

Although there is no support in the research for environmental factors as a cause for ADHD, it is believed that certain parental practices, such as over-intrusiveness or over-controlling behaviour, can exacerbate existing symptoms (Carlson, Jacobvitz, & Sroufe, 1995). Together with poor parenting, other unproven causes have been reported but later deemed unfounded such as food/diet and excessive television watching or video game playing (Carlson et al., 1995).

Developmental Course of ADHD – Infancy, Middle Childhood, Adolescence

During a child's early years it is difficult to diagnose ADHD as the primary symptoms (hyperactivity, inattentiveness, impulsivity) are more commonly accepted in young children. The symptoms must be deemed as "disruptive and inappropriate for the developmental level"

(DSM-IV TR., 2000). The diagnostic criteria of DSM-IV also stresses the need to take into account the intensity, frequency, and age of onset of the symptoms during the diagnostic process so as not to overrate the natural enthusiasm and exuberance of a young child. Earlier editions of DSM had a further criterion that often prevented the diagnosis of pre-school children, specifically, the presence of symptoms in two or more settings. For preschool children in home care, this made diagnosis prior to school difficult to obtain. According to Barkley (2006), the preschool child may suffer from a variety of symptoms in addition to those associated with ADHD, such as:

- delayed onset of language and related language difficulties (e.g., speech impairments, verbal problem solving, poor rule-governed behaviour, deficient listening comprehension);
- delayed motor development (e.g., motor coordination, neurological 'soft signs', sluggish motor movements); and
- poor self-regulation of emotions (e.g., dealing with frustration, emotional expression, empathy, arousal to stimulation) (Barkley, 2006, p. 166).

With such an array of potentially debilitating symptoms, it is not surprising that entering school presents a significant challenge for the child with ADHD.

The patterns of behaviour associated with ADHD increase dramatically once the rigours of school are applied. For the child with ADHD sitting quietly, focusing on tasks, and getting along with others, are particularly daunting requirements. In a summary of the impairments associated with ADHD, Barkley reported that school age children are likely to have difficulties in the following areas:

- cognition (deficient academic achievement skills, learning disabilities, poor time management, impaired planning, delayed adaptive and social functioning);

- school performance (disruptive classroom behaviour, underperformance, repetition of grades, placement in special education classes, school suspensions and expulsions); and
- task performance (poor persistence, variability in reaction time, decreased performance, problems with sustained tasks or time delays) (Barkley, 2006).

The cumulative effect of such a myriad of difficulties may have long-lasting effects on the child's perception of him/herself. In particular, the school-aged child finds it difficult to accept the intolerance or outright rejection he/she may experience from others due to the social problems associated with the disorder (Flick, 2000). Whether as a response to this social isolation or as a further developmental symptom, 25% or more of middle school children with ADHD will have problems with fighting. According to Barkley (2006), in children 7 to 10 years old with ADHD, at least 30 to 50% are likely to develop additional symptoms of conduct disorder (CD) and antisocial behaviour (e.g., lying, petty thievery, and resistance to authority). It has also been claimed that up to 80% of school-age children with the diagnosis of ADHD will continue to exhibit symptoms in adolescence with 30 to 65% continuing into adulthood (Flick, 2000).

As the child with ADHD enters adolescence, he/she begins a search for his/her identity and role in life (Erikson, 1980). There is an increased emphasis on peer acceptance and a move to independence and autonomy. This period of life is a difficult one for any child but especially so for a young person who has an experience of the potential developmental pathway of ADHD. Smith and his colleagues found that "the persistence of ADHD symptoms into adolescence is associated with increased academic and interpersonal difficulties and a higher incidence of criminal offending, substance abuse, automobile accidents, and school dropout" (Smith et al., 2000, p. 243).

The poor self-concept accumulated through the middle-school years can make it difficult for the adolescent to progress through this period of life unscarred. Many adolescents

develop more serious conduct problems such as Oppositional Defiant Disorder (ODD) or Conduct Disorder (CD) although it is unknown whether this is a definitive trajectory for ADHD or a response by the young person to the difficulties they are experiencing (Barkley, 2006). Little research has examined this issue, and this author wonders whether this (mis)behaviour acts as a protective strategy for a young person in that it may be better to be seen as 'naughty' rather than 'stupid'.

Comorbidity of ADHD

In addition to, or perhaps as a cause of, this developmental pathway for young people with ADHD, many suffer from other cormorbid or coexisting disorders that further exacerbate the already debilitating symptoms of ADHD. Comorbidity refers to a coexisting disorder that may or may not be related to the primary diagnosis. As a group, children with ADHD have higher than usual rates of comorbidity than their normally developing peers. In a study published in 2002 it was found that amongst a group of pre-school and school-age children diagnosed with ADHD, 75% of the preschool and 80% of the school age children had at least one other disorder (Wilens et al., 2002).

Extensive research has shown that "the diagnosis of ADHD conveys a significant risk for other coexisting psychiatric disorders" (Barkley, 1998b, p.139). In 1992, a comprehensive review of the literature found that:

- an extensive comorbidity existed between ADHD and Oppositional Defiant Disorder (ODD)/ Conduct Disorder (CD);
- peer rejection was high amongst children with ADHD and led to a multitude of negative social and academic outcomes;
- high incidences of low self-esteem in children with ADHD often led to depression (external behaviour internalised); and,

- there were high incidences of school failure and delinquency in adolescents with ADHD (Hinshaw, 1992).

While still unclear about the reasons behind these findings, many researchers including Barkley (2006) believe that future trends will see the subtypes of ADHD currently existing in DSM-IV-TR, expanded to take into account the myriad of disorder combinations that appear to exist in individuals with ADHD. Barkley (2006) questions whether the presence or absence of hyperactivity (as currently used to define subtypes in DSM-IV TR) is enough and believes that other valid subtypes could be comorbid with ODD/CD (more severe symptoms and domains of impairment), and internalized symptoms (presence of mood disorders, anxiety and/or depression). Whatever the future holds in relation to the diagnostic criteria for ADHD, there appears to be consensus amongst the medical and scientific communities that a diagnosis of ADHD is not a "… benign condition about which one need not be concerned or seek treatment" (Barkley, 2006, p.184) but a pervasive, debilitating condition that can affect many aspects of the individual's, and his/her families', life (Barkley, 2006).

Consequences of ADHD: Academic, Behavioural and Social Outcomes

What seems to be evident from the previous description of ADHD is that the condition differs greatly in each and every individual and can be further exacerbated by the presence of additional symptoms or conditions. What remains to be considered is how this myriad of symptoms affects the functioning of young people as they progress through the rigours of high school and face the pressures that being adolescents impose on them. As the focus of this thesis is on the social, behavioural, and academic outcomes of adolescents with ADHD, each outcome area will now be examined separately.

Social Outcomes

When taking into consideration the myriad of difficulties faced by children with ADHD during the courses of their lives, it is not surprising that many adolescents with ADHD suffer from problems with social interactions (Flick, 2000). A major underlying factor that influences young people's ability to interact socially is that of self-talk and self-control (Flick, 2000). For the adolescent with ADHD, the inability to use self-talk to guide behaviour may lead to poor internalization of cognitive rules that ultimately affect the development of social skills (Flick, 2000).

Research in the area of social outcomes for young people with ADHD has found that they were frequently rejected by their peers and "those with comorbid ADHD and aggressive features are almost universally rejected by agemates" (Hinshaw, 1992, p. 895). This peer rejection increases the likelihood that the children will experience increased negative outcomes including academic underachievement and low self-esteem. Low self-esteem has been found to be common amongst children with a history of acting-out behaviour and quite often has led children to internalise the behaviour and develop more internalised behavioural disorders such as anxiety and depression. Hinshaw (1992) found support in the research for this link and stated that "conduct disorder co-occurs at high rates with major depression" (p. 895).

Pelham and Bender (1982) once estimated that 50% of children with ADHD had significant difficulties with social interactions with their peers. Further research supported this estimation and upon observation of peer interactions amongst young people with ADHD and their peers, suggested that behaviours affecting these interactions included inattention, disruption, off-task behaviour, immaturity, provocation, aggression, and non-compliance with rules of game or social setting (Hinshaw & Melnick, 1995). This pattern of behaviour is not conducive to a reciprocated social relationship and has a tendency to lead to a pattern of controlling behaviour that is quickly rejected by other young people. The notion of reciprocity

in social exchanges between peers is further exacerbated by the tendency of a young person with ADHD to "talk more and listen less" (Stroes, Albert, & van der Meere, 2003, p.300).

Another factor that has a direct consequence for the social outcomes of young people with ADHD is that of bullying, both in terms of the perpetration of the act and being a victim of the act. A large study in 2003 that examined the relationship between ADHD and bullying/victimisation, found that children with ADHD were more likely to engage in bullying (13% versus 8%) and to be victims of bullying episodes (34% versus 22%) in comparison to a control group without ADHD (Unnever & Cornell, 2003). Interestingly, the instance of being bullied (in relation to peers without ADHD) exceeded the incidence of bullying amongst young people with ADHD in the study. The researchers proposed that high rates of bullying in young people with ADHD was consistent with the literature on aggressive behaviour but were unable to fully explain the findings with regard to victimisation. They proposed that:

> *"Children with ADHD may suffer from poor peer status or have few friends, making them more vulnerable to the attention of the bully. Some children with ADHD may have poor social skills or engage in inappropriate behaviour that elicits aggressive responses from their peers" (Unnever & Cornell, 2003, p.141).*

Behavioural Outcomes

It would appear that behaviour lies at the core of many of the functional difficulties associated with ADHD. The behaviours exhibited by young people with ADHD have a direct influence on their peer relationships as well as on their ability to learn. Consequently much research has been concerned with reducing the non-productive or disruptive behaviours in individuals with ADHD in an effort to remove other obstacles to a successful future such as social relationships and academic outcomes (Fiore, Becker & Nero, 1993; Loe & Feldman,

2007). The wisdom of this approach to treatment will be discussed in subsequent sections on intervention.

In 1992, Hinshaw found that "externalizing or disruptive behavioural problems are more likely to persist over time than are internalizing behaviours" (p. 894), and thus given time (and poor treatment) children with ADHD can develop more serious antisocial and aggressive symptoms and/or develop the more serious conditions of ODD and CD. Whilst the three disorders (ADHD, ODD, and CD) all share the term 'externalised behavioural disorders', the symptomatology is significantly different with ODD and CD being marked by excessive levels of hostility, defiance, and non-compliance (DSM-IV TR., 2000). This difference in symptomatology further complicates treatment in that the independent dimensions of each disorder need to be addressed separately in terms of interventions and treatment.

A later study conducted by the Appalachian Education Laboratory (AEL) (Gregg, 1996), supported Hinshaw's findings that "children with (inadequately treated) ADHD are at risk of developing antisocial behaviours including ODD, CD and delinquency" (Gregg, 1996, p.4). Furthermore, Gregg found that children with ADHD experienced high risks of exclusion from schools due to their dysfunctional behaviours. Other findings of the AEL study were:

- 50-70% of children with ADHD develop ODD;
- 20-40% develop the more serious CD;
- 20-30% develop anxiety disorders;
- 75% develop depression;
- 23-45% have juvenile convictions; and,
- 70% of juvenile offenders and 40% of adult prisoners have ADHD despite only 3-7% of the population supposedly suffering from the disorder.

Not only did Gregg (1996) find that children with ADHD often developed comorbid conditions, he found support for the belief that "the relationship between ADHD and antisocial

behaviour is so strong that some consider ADHD to be a predisposing risk factor" (p. 4). He concluded that "ADHD represented not one risk factor but a constellation of pervasive, interacting factors that multiply risk" (Gregg, 1996, p. 4). Contemporary research continues to support the findings of Hinshaw (1992) and Gregg (1996) with one study reporting findings that show up to 83% of adolescent offenders have ADHD (Hayes & O'Reilly, 2007) and an Australian study reporting that amongst a group of incarcerated youth (aged 12 to 18), 46% had ADHD (Bickel & Campbell, 2002). A recent Australian research summary on the outcomes of young people with ADHD concludes that ADHD continues to be a source of significant impairment for about 60% of people diagnosed with the condition in childhood (Royal Australasian College of Physicians [RACP], 2009).

What then are the behaviours that appear to lead to such negative outcomes in later life? Barkley (1989, 1990) has researched this area substantially and believes that the primary behavioural deficit in individuals with ADHD is the presence of poor quality rule-governed behaviour. The concept of rule-governed behaviour stems from the work of Skinner (1953) and refers to the internal language used by a person to construct behavioural chains (event-response-consequence) that help guide future behavioural choices. When this process does not function well, the person's behaviour is less internally represented or controlled and more open to the influence of external stimuli. Rules and instructions therefore are proposed not to guide young people with ADHD as much as they do for other young people.

Further research into the area of rule-governed behaviour suggests that the origins may lie in delayed internalisation of language (Barkley, 2006). The development of private speech stems from the early work of Vygotsky (1978) and refers to the "….internal speech uttered aloud by children that is addressed to the self or to no one in particular" (Berk & Potts, 1991, p.358). Over time this skill leads young people to formulate plans that assist them to guide and control their actions and behaviours. The implications of this lack of control over behaviour are

evident in many of the functional deficits displayed by young people with ADHD and have direct influence on other areas such as academic performance.

Academic Outcomes

Many studies over the years have followed children with ADHD into adolescence to determine outcomes. One such study conducted by Barkley, Fischer, Edelbrock, and Smallish (1990) followed a large sample of children with ADHD (N = 158) and without ADHD (N = 81) eight to ten years after their initial evaluation. The retention rate for the participants in the study was high (78% of children with ADHD and 81% of children without) and compared favourably to previous studies. Factors considered in the study included: comorbidity with other disruptive behaviour disorders; automobile accidents; substance use/abuse; treatment received; and academic outcomes (Barkley et al., 1990).

In terms of the academic outcomes found in the study, the children with ADHD performed considerably poorer that their peers without ADHD. Specific findings included that:

- three times as many failed a grade (29.3% versus 10%);
- more than three times as many had been suspended (46.3% versus 15.2%);
- a significant number had been expelled (10.6% versus 1.5%);
- an equivalent number had quit school (10% versus 0); and
- academic achievement on standardised tests was significantly below average (in math, reading and spelling).

Interestingly it was also found that when accounting for the presence of conduct disorder as a comorbid condition in the group with ADHD, the scores increased in severity (Barkley et al., 1990). Recent research supports the findings of this study and proposes that the more severe the symptoms of ADHD, the more negative the impact on school performance (Barry, Lyman, & Klinger, 2002: Biederman et al., 2004).

Early studies of educational implications for young people with ADHD such as the work of Zentall (1993) also supported Barkley's findings and pointed distinctly to low scores on standard measure of reading and mathematics (Zentall, 1993). One particular study during this period of time found that more than 80% of eleven year olds with ADHD were reported falling at least two years behind their peers in reading, spelling, math or written language (Anderson, Williams, McGee, & Silva, 1987). Zentall has contributed greatly to the literature over the years in relation to the theoretical basis for these findings (Zentall, 2005) and proposes that the primary deficit present in young people with ADHD is the inability to maintain attentional focus. This has come to be known as the 'Optimal Stimulation Theory' (OST) (Cooley & Morris, 1990).

The OST was first presented by Hebb (1955) and Leuba (1955) and refers to the brain's need for stimulation to maintain functioning and the importance of activity to self-regulate stimulation. Since this early work on OST, researchers have presented evidence suggesting that individuals produce stimulation through a variety of activities such as shifts in attention, talking, risk-taking, and exciting or illegal behaviour (Shaw & Brown, 1999; Zentall & Zentall, 1983). When internal and external stimulation are insufficient, individuals attempt to regulate their level of stimulation by changing activities, focus, or experiences (Banaschewski, Brandeis, Heinrich, Albrecht, Brunner & Rothenberger, 2003). If through this change in activity, young people are still not able to produce an optimal state of arousal, then their "…attention, response preparation, motor inhibition and ability to allocate effort to a task are compromised" (Zentall, 2005, p.823). It would appear that this greater need for stimulation has a direct effect on the individual's ability to selectively attend and/or sustain attention over time, both of which have significant implications for learning.

One specific area of academic underachievement that has been investigated thoroughly is that of reading. A large longitudinal study, the Australian Temperament Project, was

commissioned in Australia in 1983 and investigated reading difficulties in children from all areas of Australian society (Prior, Sanson, Smart, & Oberklaid, 2000). Significant findings of the study related to young people with ADHD and it was proposed that behavioural adjustment difficulties both preceded and were associated with the development of reading difficulties (Prior et al., 2000). The project findings revealed that when screened for the presence of attention and/or conduct problems, the incidence and severity of reading difficulties increased. Once again it would seem that the key factor in determining the 'functional' outcomes for young people with ADHD (socialisation, academic progress) is that of behaviour and thus interventions that focus on social or academic outcomes alone without including behaviour as a target, would not be as powerful as a multimodal intervention that addressed all areas of concern.

Summary

Given the social and behavioural outcomes of adolescents (and/or school-age children) with ADHD, it is not surprising that these children experience high rates of school failure and academic underachievement. The core symptoms of ADHD (inattention and impulse control) correlate highly with readiness in early development, suggesting the need for intensive early intervention. Without such intervention, the acting-out behaviour may precipitate increased underachievement and encourage the consequent negative outcomes previously mentioned (i.e., antisocial/aggressive behaviour, low self-esteem, depression, peer rejection). The potential for negative outcomes in multiple domains of their life is high for young people with ADHD. One would hope that intervention and treatment would contribute to preventing some of these negative outcomes and lead children with ADHD to a more fulfilling, functional adult life. Current treatment options are varied and sometimes controversial (i.e., use of stimulant

medication). In the next section, a range of intervention options are discussed and explored in relation to the research supporting their use.

Interventions for the Treatment of ADHD

Within the vast body of literature on interventions for treatment of ADHD, it would appear that most could be categorised as being medical, behavioural or educational. Although other interventions such as parental interventions, multimodal interventions, and cognitive behavioural interventions (Purdie, Hattie, & Carroll, 2002) have been researched over the years, due to the focus of the present study in a school setting they will not be investigated in as much depth. They will instead be integrated into the three categories of medical, behavioural, and educational interventions and the strengths and limitations of various approaches will be discussed.

Medical Interventions: Psycho-stimulant Use

The history of psycho-stimulant use dates back to 1937 when Charles Bradley, a psychiatrist, used them to treat children with brain injuries and began to notice immediate improvements in other areas such as: better self-control; improved academic performance; improved attention to task; and, decreases in disruptive behaviours (Barkley, 2006). Since then, over 200 controlled studies have been completed (Connor & Steingard, 2004; Spencer, Biederman, Wilens, Harding, O'Donnell, & Griffin, 1996), many of which have demonstrated the "….efficacy of the stimulants in improving the core symptoms of ADHD and enhancing behavioural, academic, and social functioning in about 50 to 95% of children treated" (Barkley, 2006, p.608). Further support for the use of stimulants in ADHD came from the scientific area of neurochemistry and in particular the 'dopamine hypothesis' proposed by Zametkin and Liotta (1998). Stimulants increase the production of dopamine (and

norepinephrine) in the body and this increased production plays a key role in reducing the symptoms associated with ADHD (Barkley, 1998a). What is less clear in the research is whether the positive effects found on a number of outcome measures persist over time with medication treatment alone (Raggi & Chronis, 2006).

Despite its long history of use, psycho-stimulant medication remains a controversial issue amongst various community groups and although studies continue to determine its long-term effects, other research is focused on monitoring trends in use across regions/localities and across time. A study published in 2002 examined trends of psychostimulant usage (dexamphetamine and methylphenidate) in Australia and other countries, as well as each state in Australia (Berbatis, Sunderland, & Bulsar, 2002). Whilst limiting prevalence to those children with ADHD who were receiving psychostimulant medication treatment, it is the first standardised analysis from statutory international and national sources and as thus provides valuable information on the prevalence of stimulant use.

Data for the study were drawn from a reliable source, the International Narcotics Control Board (INCB), which publishes yearly reports with statistics to members including the Treaties and Monitoring Unit (TMU) in Australia's Commonwealth Department of Health and Ageing (Berbatis et al., 2002). An increasing trend in psychostimulant usage at an average rate of 12% was evident across all ten countries studied with a 26% increase in Australia. The study found Australia to be third globally behind the US and Canada in terms of prevalence of psychostimulant use. Prevalence in Australia is thought to be around 1.8% as compared to the US rates of 3 to 5% for stimulant use in children with ADHD. Interesting data arose from the jurisdictional analysis in that Western Australia (WA) had significantly higher rates of consumption than other states and territories. It was estimated that 4.2 to 4.5% of WA children (aged 4-17 years) were receiving psychostimulant medication for ADHD in comparison to

NSW with a rate of 1%. The other Australian states did not significantly differ from the national average of 1.8%.

In 1994, a major clinical trial was undertaken by the National Institute of Mental Health (NIMH) in the United States together with six collaborating academic sites. The study, known as the Multimodal Treatment Study for Children with ADHD (MTA) hoped to identify the most effective treatment conditions for children with ADHD and provide longitudinal data on the sustainability of treatment efficacy (MTA Cooperative Group, 1999). A total of 579 children aged 7 to 9.9 years who were diagnosed with ADHD (combined type) were included in the study and were randomly assigned to one of four treatment groups. The children and their families were followed intensively for the 14 months of treatment with assessments occurring at baseline, at 9 months, at completion, and a 24 month follow-up after the initial baseline (Pelham, 1999). The treatment groups were as follows:

- Treatment condition 1 - medication alone beginning with a 28 day, double-blind placebo-controlled trial. Monitored monthly to ensure optimal medication and dosage remained stable;
- Treatment condition 2 - behavioural treatment involving parent training, child-focused treatment and school-based intervention. Intensive intervention on all levels;
- Treatment condition 3 - combined treatment including all aspects of the medication and behavioural treatment conditions; and
- Treatment condition 4 - community care option. Parents were provided with a list of community mental health resources and made their own arrangements.

The richness and complexity of the study results are still being analysed and with follow-up assessments from this ongoing longitudinal study they promise to offer much to the growing body of literature on the subject of treatment efficacy in ADHD. Initial findings from the study (MTA Cooperative Group, 1999) which occurred at the 14 month mark of the study,

seemed to indicate that all treatment conditions showed significant reductions in level of symptoms but that medication alone was superior to behavioural treatment alone in terms of ADHD symptoms. When combined with behavioural treatment, children on medication were able to be maintained on a lower dose. One of the principal researchers, Pelham (1999), cautions though that medication treatment may provide short-term benefits but these benefits do not last beyond medication termination and thus more effective treatments will produce longer-term outcomes (Pelham, 1999). Follow-up analysis of findings appears to support Pelham's claims and found that the combination of medication and behavioural interventions produced the greatest improvement in symptoms and functional outcomes over a longer period of time (Murray et al., 2008). This particular review also found that the addition of behaviour management in treatment facilitated adherence to long-term treatment (Murray et al., 2008). Although it is now almost ten years since the MTA study ended, clinically relevant information continues to be generated from the study which will be instrumental in guiding future research.

The MTA study focussed mostly on the reduction of ADHD symptoms. However, in an earlier review of the literature regarding the effects of stimulant medication on learning it was found that the evidence regarding effects on academic performance was much less conclusive than the evidence regarding effects on behaviour (Swanson, Cantwell, Lerner, McBurnett, & Hanna, 1991). They believe that the reasons for these findings may be based on medication as the doses needed to manage behaviour may be detrimental to optimal academic performance. Another possibility for the findings of Swanson et al. (1991) is related to the fact that children with ADHD also suffer from a higher than normal incidence of learning disorders, conduct disorders, and anxiety/depression (Hinshaw, 1992) and thus although the drug treatment addresses the behaviour problems, it does not explicitly address the related disorders (i.e., learning disabilities).

Recent analysis of the MTA study seems to lend increased support to the combined treatment approach (medication and behavioural management) and again supports the belief that combined treatment may reduce the dosage of medication needed as well as 'normalising' behaviours (Connors, Epstein, March, Angold, Wells, & Klaric, 2001; Murray, et al., 2008; Swanson, Kraemer, Hinshaw, Arnold, Connors, & Abikoff, 2001). Furthermore, it was found that the combined approach to treatment resulted in improved social skills and improved parent-child relationships, including a reduction in harsh and ineffective parenting (Hinshaw et al., 2000). Parents also indicated preference for the combined treatment (Chronis, et al., 2004), perhaps indicative of their need to feel involved in the treatment process.

Medication as the first and only form of treatment for young people with ADHD has many limitations. As previously mentioned it is known to not support the normalising of behaviour (Connors et al., 2001), nor does it teach long-term habits which may improve academic functioning (Spencer, Wilens, Biederman, Faraone, Ablon, & Lapey, 1995). Other barriers such as access to specialist services, cost and compliance with treatment combine to limit this as a single approach to treatment and highlight the need to develop efficacious psychosocial interventions which involve parents and the school system and which demonstrate long-term benefits in the academic functioning of children and adolescents with ADHD (Raggi & Chronis, 2006). In the setting of the present study, there has historically been a high rate of young people diagnosed with ADHD, with the current enrolment of ADHD young people being approximately 30% of the school population. Of this group, approximately 16% receive medication or any form of ongoing treatment (according to school records as of 2007). Lack of treatment is often due to lengthy waiting lists for public hospital treatment and financial disadvantage which prevents private medical access, findings supported by the NSMHW (Sawyer et al., 2000).

Behavioural Interventions

The characteristics of children with ADHD (inattention, hyperactivity, impulsivity) are often maladaptive to the development of healthy relationships within the family and the social setting of schools. They can also place a lot of pressure on families already under stress and lead to parents developing poor parenting strategies and/or inadvertently maintaining or exacerbating problematic behaviours. Training parents in behavioural management has a long history of success for children with ADHD (Chronis et al., 2004) and can result in improvements in other areas such as social behaviour and acceptance.

The main focus of parent behavioural training is to teach parents to implement behavioural modification techniques which consist of:

> *"....identify(ing) and manipulate(ing) the antecedents and consequences of child behaviour, target and monitor problematic behaviours, reward prosocial behaviour through praise, positive attention, and tangible rewards, and decrease unwanted behaviour through planned ignoring, time out, and other non-physical discipline techniques" (Chronis, Jones, & Raggi, 2005, p.489).*

Many studies have supported the efficacy of parent training and suggested that it results in improvements for the young person with ADHD in areas such as problem behaviour (Fabiano, & Pelham, 2003), parental stress (Anastopolous, Shelton, DuPaul, & Guevermont, 1993), and social behaviour and acceptance (Pelham, Schendler, Bender, Nilsson, Miller, & Budrow, 1988).

Behavioural management strategies have also been shown to have support as a classroom intervention (Pelham, 1999). They are most effective when they commence with a functional assessment of the individual child and a well designed behaviour program that targets specific behaviours and attempts to decrease the unwanted behaviours (or increase in

the case of prosocial behaviours) through shaping. Many researchers have found that involving parents in the process can significantly improve the outcomes (Chronis, Fabiano, Gnagy, Onyango, Pelham, & Williams, 2001; Fabiano & Pelham, 2003). One such intervention is the use of the daily report card (DRC) in which specific behavioural goals are set and the child is rewarded at home based on attainment of these goals (O'Leary, Pelham, Rosenbaum, & Price, 1976). This strategy has been shown to significantly improve observational measures and teacher ratings of classroom behaviour (Chronis et al., 2001).

Behavioural interventions which focus on manipulation of environmental variables to improve behavioural outcomes, have been shown to be a necessary component of effective treatment for the behavioural and academic impairment of children with ADHD (Raggi & Chronis, 2006). Such interventions consist of manipulating the antecedents (location, setting, structure), positive consequences (praise, tangible rewards, token economies), and negative consequences (time out, loss of privileges, response-cost procedures) (Chronis et al., 2005). However, with the significant time and effort required to implement behavioural interventions and the limited evidence to suggest that they promote generalisation and maintenance of gains beyond the program, their efficacy as a primary treatment approach is questionable (Chronis et al., 2005; Raggi & Chronis, 2006).

Although behavioural interventions have a strong evidence-based efficacy, as with pharmacological interventions, they have some limitations. Most notably, they are a labour intensive intervention and require cooperation and communication with all parties involved which can be a significant barrier to implementation (Chronis et al., 2005). Secondly, most research on the use of behavioural interventions has focussed on classroom behaviour and has not included academic outcome measures which make it unclear as to whether they have significant impact on academic outcomes (Raggi & Chronis, 2006). Thirdly, the efficacy of behavioural approaches is severely impaired if they are not implemented consistently and over

a considerable length of time and thus their acceptance in terms of practicalities of use is questionable (Raggi & Chronis, 2006).

Contemporary research has begun to expand the findings from behavioural research and combine them with specific educational interventions in an attempt to overcome the limitations of individual approaches. Given the chronic and pervasive nature of ADHD, it is not surprising that intensive, multi-component treatments are often needed (Chronis et al., 2005).

Educational and Psychosocial Interventions

Children spend a large part of their lives in a school setting, which makes school an important setting for assessment of outcomes. In reviewing the literature on the educational implications of ADHD, many findings support the fact that children with ADHD face the risk of school failure two to three times greater than that of children without ADHD (Rubinstein & Brown, 1981). Barkley et al. (1990) support these findings and believe that children with ADHD who are taught in a regular classroom will experience school failure or fail at least one grade by adolescence. It has also been found that, "…. more than 80% of 11 year olds with ADHD were reported to be at least two years behind in reading, spelling, math, or written language" (Anderson et al., 1987). There is also a growing body of research suggesting that the 'severity' of ADHD symptoms is a good predictor of academic underachievement in writing, reading, and mathematics (Barry, Lyman, & Klinger, 2002). An Australian study in 2002 found more specifically that children with ADHD had lower reading scores than their counterparts without ADHD (Clark, Prior, & Kinsella, 2002). The study proposed that cognitive deficiencies in executive functioning together with missed early instructions due to their disruptive behaviours contributed to the causal pathway from ADHD to later reading difficulties (Clark et al., 2002). Later studies supported these findings and also proposed that children with the inattentive subtype were more likely to experience low reading, spelling and

maths scores than their counterparts with predominantly hyperactive/impulsive subtypes (Massetti et al., 2008).

With a growing body of research reporting academic failure in children with ADHD, recent research has investigated overcoming this failure through modification of the school environment, curriculum, and individualised instruction in order to improve both behavioural and academic outcomes (Chronis et al., 2005). Pelligrini and Horvat (1995) believe that school success or failure depends on "goodness of fit" or how well the within child variables (such as biological predispositions) interact with the environmental variables (such as classroom expectations). The severity of the symptoms of ADHD can be reduced or exacerbated depending on the structure of the learning environment in which the child is required to learn. For example, a child with ADHD who is expected to sit in a seat for an extended period of time and engage in quiet time and independent work will have great difficulty complying with these requirements. Likewise a child with ADHD in a class of 30 peers all engaged in conversation or talk, will have great difficulty sustaining attention to task and focussing on the relevant stimuli. A simplistic approach is to consider the child a problem and endeavour to apply some remedial strategy to change the child. However, taking this approach precludes exploration of other environmental-based solutions (Pelligrini & Horvat, 1995).

The importance of relevant, accessible curriculum is a major variable in the success or failure of young people in schools (Legters, McDill, & McPartland, 1994). For example, Barkley (1994) has found that interesting, challenging, and meaningful experiences are more apt to keep children with ADHD motivated and engaged. The delayed reward of grades does not work as well with children with ADHD who seek immediate gratification from the task itself (Barkley, 1994).

Other researchers (Kohn, 1993; Weaver, 1992) have found the following aspects of curriculum to be important in engaging children with ADHD:

- Experiences must be meaningful to assist focus and concentration;
- Choice and ownership of what is learned increases the probability that children will take responsibility for their learning (and behaviour);
- Curriculum that relates to children's lives and concerns, involves them in meaningful experiences and teaches problem-solving through real-life applications, will assist the child with ADHD to overcome their lack of tolerance for boredom; and,
- Choice is critically linked to motivation and giving children with ADHD choice in what and how they learn will increase the likelihood of engagement.

As well as 'what is taught' (curriculum), 'how it is taught' (instruction) has major implications for children with ADHD. Implementing the strategies identified as effective teaching strategies will benefit children with ADHD as well as their peers without ADHD in mainstream classrooms. These strategies include: previewing the lesson; providing direct instruction; connecting information to students' prior knowledge and personal experience; checking for understanding; and preparing students for transitions to the next activity (McInerney, 1994). The main difference for children with ADHD is in relation to the intensity and frequency of these interventions as compared to that needed by peers without ADHD. Other research has examined the idea of 'task stimulation' (Fiore et al., 1993; Zentall, 1993) whereby the added variable of stimulation in a task, such as colour, verbal response, and motor activity, can help improve outcomes for children with ADHD. Such research is based on the Optimal Stimulation Theory (OST) (see 'Academic Outcomes') which suggests that all individuals have a biological need to optimise the level of incoming stimulation (Raggi & Chronis, 2006).

In keeping with the ideas proposed in the OST, another field that is showing promise as a means of providing task stimulation is that of computer assisted instruction (CAI). The constant stimuli presented as well as the immediacy of feedback received assist the child with

ADHD to focus and increase concentration (Dailey & Rosenberg, 1994; DuPaul & Eckert, 1998). Such findings are supported by other research (e.g., Martone, DuPaul, & Jitendrea, 2005; Ota & DuPaul, 2002) which also suggested that not only does CAI increase sustained attention, it also improves the work production of children with ADHD.

Many other variables form part of what is termed 'educational interventions' for young people with ADHD (i.e., peer tutoring, strategy training, self-monitoring, choice making) which, as with those already mentioned, have a body of research supporting their effectiveness in improving behavioural outcomes but are less conclusive in their efficacy in improving academic outcomes. Self-monitoring and self-reinforcement are emerging as effective tools for improving social and academic behaviours (Raggi & Chronis, 2006). They involve young people setting goals for on-task behaviour and classroom work and monitoring these goals in order to be either self-rewarded or rewarded following successful completion. While applied in an educational setting, self-monitoring and self-reinforcement are primarily a form of cognitive behavioural therapy that aims to develop self-control. Despite evidence of short-term success in its use, Ervin, Bankert, and DuPaul (1996) suggest that it does not easily generalise to other times and settings.

Strategy training involves teaching and transferring a specific skill to children that they can implement in an academic situation to improve their performance (Evans, Pelham, & Grudberg, 1995). Like self-monitoring and self-reinforcement, strategy training also falls into the area of cognitive behavioural therapy in that it gives responsibility and ownership to the young person. However, the present limited research base is unable to conclude whether strategy training holds much promise as an effective academic intervention for young people with ADHD (Raggi & Chronis, 2006).

An important task modification technique that is also a core principle of the setting in which the present study took place, is that of choice making. Choice making refers to allowing

the young person to select academic tasks or materials from a number of alternatives and thus allows the young people to feel they have some control over the task and can negotiate the task to suit their needs (Raggi & Chronis, 2006). There has been little research related to choice making specific to young people with ADHD, however research conducted by Dunlap and colleagues in 1994 focussing on students with emotional and behavioural disorders (and therefore including children with ADHD) found that giving students choice resulted in significantly higher levels of task engagement and less disruptive behaviour than the no choice condition (Dunlap, dePerczel, Clarke, Wilson, Wright, & White, 1994). Unfortunately, no research to date has measured academic outcomes as a result of giving choice in tasks.

Peer tutoring, as with most of the educational interventions mentioned to this point, offers potential but does not have evidence to support its efficacy students with ADHD. Peer tutoring in which a young person with ADHD is paired with a peer tutor that assists them in their learning, allows for one-on-one instruction and immediate feedback both of which have value for young people with ADHD (DuPaul & Stoner, 1994). Despite the potential benefits of peer tutoring on classroom behaviour and academic productivity, few studies have sought to focus on young people with ADHD and thus its efficacy in this particular cohort is relatively unknown (Raggi & Chronis, 2006).

A large Australian study on inclusive practices in education in 2007 found that many of the practices proposed as beneficial for young people with ADHD, and/or young people with disabilities, would also be effective for others in the classroom (Shaddock, Giorcelli, & Smith, 2007). It was found that effective practitioners were those that believed there was no single 'best model' for including children with ADHD in the classroom, but that any strategy or teaching approach had to be adapted to suit the strengths and weaknesses of the individual child, with or without ADHD (Shaddock et al., 2007). When teachers viewed every child in their class as an individual with their own set of strengths and weaknesses, then children with

ADHD were not necessarily viewed as 'problems' but as individuals with their own set of needs.

As with behavioural management interventions, some limitations exist in the implementation of educational interventions. There is very little research that explicitly examines academic outcomes as a result of educational interventions, with most research reporting on behavioural improvements. One would expect that educational interventions would be preferred by teachers because of the ability to include them in a group situation as opposed to the individualised nature and intensity of behavioural management techniques. However, for the efficacy of educational interventions as an intervention for young people with ADHD to gain credence, more research is needed that focuses on academic outcomes as well as behavioural outcomes.

Conclusion

There is a growing body of research focussing on successful interventions for young people with ADHD. Research most commonly reports on behavioural improvements rather than outcomes of an academic or social nature. Given that many of the negative outcomes experienced by young people with ADHD are related to their behaviour, it is important to at least include a component in any intervention that addresses reductions in problematic behaviour. Purdie et al. (2002) proposed that unless one of the three major aspects of ADHD (inattention, impulsivity, and hyperactivity) is addressed, it is unlikely that gains will be made in other areas due to these behaviours being essential prerequisites for successful learning.

It would also appear that the potential for negative outcomes in multiple domains of their lives is high for young people with ADHD. One would hope that intervention and treatment would contribute to preventing some of these negative outcomes and assisting children with ADHD to lead a more fulfilling, functional adult life. Current treatment options

are varied and sometimes controversial (i.e., use of stimulant medication) and thus need more exploration in relation to the research supporting their use. Likewise, specific research needs to focus on which intervention is most effective for which outcome as opposed to general gains that most commonly focus on behavioural improvements.

Another area of study that has yet to be thoroughly researched, concerns the nature of the educational settings that are most conducive to positive outcomes for young people with ADHD. The following chapter will explore a specific educational approach for young people at risk of disengaging from education, including young people with ADHD.

CHAPTER THREE

Literature Review: Alternative Education

Introduction

Given the negative schooling outcomes that are common to young people with ADHD, they often experience school dropout, exclusion, and suspension from mainstream education. Unfortunately, an inordinate number of young people with ADHD are represented in youth detention centres or are involved with juvenile justice with 23 to 45% of young people with ADHD having juvenile convictions and 70% of juvenile offenders suffering from ADHD (Gregg, 1996). Other young people with ADHD move from mainstream education into alternative education in order to meet their educational needs. The school in which the present study occurred has always maintained a high proportion of young people with ADHD (averaging 40%). The school, the Centre Education Programme, is an alternative education or flexible learning site. As such, alternative education warrants exploration as a potential option for young people with ADHD who have been unable to continue in mainstream education settings.

This chapter will explore the concept of alternative education and the variety of models that fall into the category with particular focus on the model of 'flexible learning' used by the school in which the present study took place. Following this, staff selection and training for working in flexible learning/alternative education sites will be discussed. Finally an historical overview of the site of the present study will be given with reference to the current growth in provision of flexible learning.

What is Alternative Education?

Alternative pathways to educational success have always existed within and alongside our more traditional school settings (i.e., workplace learning, trade-schools). However, as high school completion rates continue to drop and currently in the U.S. stand at 69.9% (Barton, 2005) and 71% in Australia (Lamb, 2009), the need to define and examine what the term 'alternative' actually refers to, has never been more salient. In a paper that provided an overview of alternative education in the U.S., Aron (2006) defined the term as follows:

> *"(Alternative education)……. broadly refers to schools or programs that are set up by states, school districts, or other entities to serve young people who are not succeeding in a traditional public school environment. Alternative education programs offer students who are failing academically or may have learning disabilities, behavioural problems, or poor attendance an opportunity to achieve in a different setting and use different and innovative learning methods. While there are many different kinds of alternative schools and programs, they are often characterized by their flexible schedules, smaller teacher-student ratios, and modified curricula" (p.6).*

A definitive typology of educational facilities that fall within this broad definition has yet to be developed and accepted by the field (Aron, 2006) however, earlier work in trying to make clear distinctions between alternative programs and more traditional ones provides a solid basis for further research (Raywid, 1994). Raywid developed a three-type typology that focussed on the programs goals as the distinguishing feature. A summary of this is provided in Table 2.

Table 2

Raywid's Typology of Alternative Education

Type I - schools 'offer full time, multiyear, education options for students of all kinds, including those needing more individualisation, those seeking an innovative or challenging curriculum, or dropouts wishing to earn their diplomas. A full instructional program offers students the credits needed for graduation. Students choose to attend. Other characteristics include divergence from standard school organization and practices (deregulation, flexibility, autonomy, and teacher and student empowerment); an especially caring, professional staff; small size and small classes; and a personalized instruction, self-paced work, and career counselling.
Type II - schools whose distinguishing characteristic is discipline, which aims to segregate, contain, and reform disruptive students. Students typically do not choose to attend, but are sent to the school for specified time periods or until behaviour requirements are met. Since placement is short-term, the curriculum is limited to a few basic, required courses.
Type III - programs provide short-term but therapeutic settings for students with social and emotional problems that create academic and behavioral barriers to learning. Although Type III programs target specific populations- offering counselling, access to social services, and academic remediation- students can choose not to participate.
(Source: Raywid, M.A., 1994, Alternative schools: The state of the art. *Educational Leadership*, *52(1),* 26-31.)

Preliminary research indicates that Type I programs are more successful given their long-term nature and their focus on changing the learning environment whereas Types II and III focus more on changing the student and due to their short-term nature, do not appear to generalise gains to other settings such as workplace, and other learning environments (Aron, 2006).

Another promising typology focuses on the students' educational needs and defines the target groups through their educational problems or the challenges they present. This model proposed by Roderick (in Aron & Zweig, 2003) is summarised in Table 3.

Table 3

Roderick's [1] Typology of Target Groups

1. Students who have fallen 'off track' because they have gotten into trouble and need short-term systems of recovery to route them back into high schools. The goal of getting them back into regular high schools is both appropriate and realistic for this group.
2. Students who have prematurely transitioned to adulthood either because they are (about to become) parents, or have home situations that do not allow them to attend school regularly.
3. Students who have fallen substantially off track educationally, but are older and are returning to obtain the credits they need to transition into community colleges (or other programs) very rapidly. These include: older individuals who are just a few credits away from graduation, young people who are transitioning out of the jail system, or have had a pregnancy and are not ready to complete their secondary schooling.
4. Students who have fallen substantially behind educationally - they have significant problems, very low reading levels, are often way over age for grade. Many of these children have been retained repeatedly and a number of them have come out of special education. They include 17 or 18 year-olds with third or fourth grade reading levels who have never graduated from 8th grade (or who have gone to high school for a few years but have never actually accumulated any credits). This is a very large group of youth, and most school systems do not have any programs that can meet their needs.

Source: Aron, L.Y. & Zweig, J.M., 2003, *Educational Alternatives for Vulnerable Youth: Student Needs, Program Types, and Research Directons.* Washington, D.C.: The Urban Institute.

[1] This typology was suggested by Melissa Roderick of the University of Chicago at a daylong roundtable on alternative education sponsored by the C.S. Mott Foundation and held at the Urban Institute in Washington, D.C. on April 16, 2003.

Whilst much work remains to be done on developing an accepted definition of 'what' constitutes alternative education across educational districts and countries, it is becoming clear in the research that no single school can manage the educational diversity that exists today (Aron & Zweig, 2003). The need to broaden our perspective of 'education' in an effort to meet the needs of those who do not fit into mainstream schools has been a constant challenge to educators throughout history. Given the economic and social results of not doing so (e.g. increased juvenile delinquency, school dropout) it would appear that alternative education provides great promise as an option for at-risk youths (Aron & Zweig, 2003).

While unable to clearly define alternative education, much of the research has focussed on the practices present in programs that fit accepted typologies. One such study instigated by the Australian Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA) conducted a survey on programs that exhibited best practices in addressing student behavioural issues nationally (de Jong, 2004). The concept of 'alternative education programs' (AEP) as a successful approach to this issue was identified during the study and was subsequently investigated by de Jong and Griffiths (2006) in an attempt to define the term and explore the positive and negative outcomes of the approach. Although the term 'alternative' is contentious to many in the field in the light of the term 'inclusive education', the Disabilities Discrimination Act (Commonwealth of Australia, 1992) identifies that features involving challenging behaviours and learning difficulties can lead young people to a position of being unable or unlikely to access mainstream education programs. Thus it would appear that there is a place within the continuum of educational service delivery for AEP. Effective AEP were characterised by practices embedded in three broad categories: organisation and partnership; pastoral care and ethos; and curriculum and pedagogy (de Jong & Griffiths, 2006). The main characteristics of effective alternative education program practices according to de Jong and Griffiths (2006) are summarised in Table 4.

Table 4

Characteristics of Effective Alternative Education Program Practices

Organisation and Partnerships

- adoption of a 'holistic/ systems/ wraparound' framework of delivery
- understanding student behaviour from an eco-systemic perspective
- parent and community participation
- interagency collaboration
- developing a shared vision

Pastoral Care and Ethos

- relationship-building
- mentoring and role-modelling
- providing a sense of purpose and vision in life for students
- high staff to student ratio
- resourcing with high quality staff
- ensuring a supportive, non-threatening learning environment
- viewing behaviour management as an educative process
- implementing program-based case management processes
- being proactive rather than reactive

Curriculum and Pedagogy

- being responsive to students' needs
- encouraging student ownership of their learning program
- including planned future pathways
- incorporating literacy and numeracy development
- developing resiliency
- improving self-understanding and life skills.

(Source: de Jong, T.A., & Griffiths, C., 2006, The role of alternative education programs in meeting the needs of adolescent students with challenging behaviour: Characteristics of best practice. *Australian Journal of Guidance & Counselling*, 16(1), 29-40)

In summarising their findings de Jong and Griffiths (2006) supported the need for AEP and proposed that, "… there is a compelling argument which suggests that, provided AEP are embedded in best practice, they can play a critical role in meeting the educational, social, and emotional needs of adolescents with challenging behaviour" (p. 39).

Many other authors (e.g., Aron, 2006; Aron & Zweig, 2003; de Jong, 2004; Raywid, 1994; te Riele, 2007) have contributed to the research on what constitutes 'best practice' in alternative education by developing lists of practices common to all programs defined as alternative education programs. Based on such research the National Association of State Boards of Education (1996) reported that;

> *The success of these programs has been measured in terms of improved grades, school attendance, and graduation rates; decreases in disruptive and/or violent behaviours and suspensions; and an improved sense of direction and self among participating students. (National Association of State Boards of Education, 1996, p. 1).*

The Board went on to identify the following as a summary of the research into effective characteristics of alternative education programs/schools;

- High academic standards/expectations - The curriculum in these programs is not diluted or watered down. It is often expanded to enhance the educational and vocational interests of the students;
- High standards for interpersonal/social interactions - Well defined standards of behaviours that have strict and clear expectations are applied to everyone. The curriculum fosters the development of interpersonal and social skills addressing issues such as family life, peer pressure, and conflict resolution;

- Student-centred education and intervention plans - Structure, curricula and support services in the program/school are designed with both the educational and social needs of the students in mind. Assessment and support services work toward identifying and addressing the cognitive, emotional, health and socio-economic factors affecting the education and development of participating students;
- Teacher/student ratio - Low teacher/student ratio is important to the success of the program/school. Successful AEPs in the research show an average ratio of 1-16 students per teacher.
- Site-based management/flexibility - Whilst having clear and strong accountability measures and systems, successful programs/schools are often free from centralised management. Administrators, teachers, support services staff, students, and parents are involved in the different aspects of the programs/schools that they participate in. This is achieved through specific committees or what could be described as 'quality circles';
- Parent and community involvement - Parent and community involvement is critical for the success of these programs/schools. All of the researched programs/schools noted that parents are required to participate in the education of the young people through active participation in the school community;
- A Program versus a School - Most responses to this cohort of young people are designed as either programs or schools. Programs are intended for students who may need more short-term interventions to get through a particular problem or situation with the goal of returning to mainstream education. Schools however are designed for students that need to obtain an education outside of the traditional school setting;
- Location - Sometimes the location of the program/school has proven critical to its success. Some are located within a community school or agency; others have their own facilities or share facilities with a community college or university. Regardless of the

location, successful programs/schools provide healthy physical environments that foster education, emotional well-being, a sense of pride, and safety.

(National Association of State Boards of Education, 1996).

A common theme emerging from the research summarised above is that of programs/schools for 'youth at risk'. More contemporary research into alternative education is exploring alternative education as a 'learning choice' rather than as a fix-it response to a perceived problem (youth at risk) (te Riele, 2007). In her Australian-based study, te Riele (2007) mapped the alternative education landscape for youth in the state of New South Wales. te Riele (2007) proposed that the concept of 'youth at risk' is one that invokes political, ethical and moral judgements and may serve the agenda of those making the judgement rather than the young people in question. She also cautions that the concept of 'youth at risk' arises from a deficit perspective in which the problem/s lies with the young person and not the system. If one just 'fixes' the young person then the system will be fully functional.

The second perspective proposed by te Riele (2007) is that of learning choices which suggests that something about the educational provision rather than the young person needs to change. The key assumptions underlying this perspective are that all young people have the capacity to learn as long as the learning environment is conducive to their needs. Indeed, it acknowledges that schools may play a direct role in 'activating or enabling the risk of some young people' (te Riele, 2007, p.56). The concept has been summarised clearly by Blakers and Nicholson (1988) in relation to alternative education provision:

> *"Schools [must] ask a different question about each student: not, as at present, Where does this student fit into our categories and processes?, but rather, How can we build on the interests, capacities and experiences which make her or him a unique individual?" (p.46).*

This perspective proposed by Blakers and Nicholson (1988) challenges us to view the students who attend AEP in a different light (different learners as opposed to problem learners) and to see alternative education as a valid and resourceful partner in the educational process. Holdsworth (2004) advocates that alternative programs/schools can be a "laboratory for change" (p.11) and that mainstream schools have much to learn from them.

It would appear that while a body of research is emerging on alternative education, there is still much work to be done. The diverse nature of both the target populations and the programs/schools themselves, make it difficult to generalise claims from studies as applicable to all settings. Each setting, and the cohort they service, is unique and thus needs to be adequately investigated in terms of the philosophy guiding the resultant work practices before laying claims to any findings. The setting of the present study is an alternative school (flexible learning centre) that is part of a larger network of schools. Whilst it would seem prudent to examine the history of the network and then focus on the school, historically the network began as a result of the success of the school, as perceived by educational peers and funding bodies, and thus the school that the study took place in shall be first examined and then an introduction to the network will follow.

The Present Study School Setting

Centre Education Programme (CEP) is a Flexible Learning Centre based in Logan City, a satellite city south of Brisbane. As with most AEPs, the program was developed in conjunction with the community as a response to an identified need, specifically truancy among high school students. Most of the suburbs of Logan City are part of the Logan-Beaudesert school district with others forming part of the Albert region. The Logan Beaudesert District (LBD) is a large district that has a huge social and cultural diversity as well as being identified as having significant socio-economic disadvantage (Connor, 2006). According to

Connor, "long-term unemployment, transience and dependence on welfare support characterise many families in the district" (2006, p.13). The 2006 census identified the following statistics in relation to the Logan/Beaudesert district:

- 5.8% of the population of Logan were unemployed with a further 32.2% of all persons over the age of 15 not in the labour force. This unemployment figure is higher than the national figure and does not represent the 25.2% that work part-time;
- high youth population with 39.8% below the age of 24;
- 25.3% of the population were born overseas with 17.9% speaking a language other than English at home; and
- income levels were below the national average.

(Australian Bureau of Statistics, 2006)

In addition, the District Youth Achievement Plan (DYP) for the Logan-Albert-Beaudesert region (2003-2005) (Queensland Department of Education, 2004) identified, through wide consultation, that stable accommodation, transport, placement in alternative pathways for learning and the requirement for mentors/role models were key priority issues for youth in the LBD (Connor, 2006). The DYP found that young people in the district were disengaging from learning earlier than their peers in other districts and particular attention needed to address the middle phase of learning (ages 10 to 13 years). In addition, they found that chronic absenteeism and low levels of literacy and numeracy were factors of particular concern (Connor, 2006).

Centre Education Programme (CEP) began operating in 1983 and has grown considerably during that time in size and nature. Initially CEP was a small program that supported youths who were truanting from school and the program worked with a local secondary school to identify the barriers to engagement and support the young people to re-engage with school. During this time, the funding for the program was primarily carried by the

Christian Brothers together with a variety of grants. Over the years, it became more obvious that for a certain group of young people, reintegration to mainstream schools was not a viable option and thus CEP began a process of registering as an independent school. By obtaining this status, CEP could begin to attract state and federal funding on a pro-rata student basis that would encourage sustainability of the program. The registration process was completed in 1999 and with more sustainable funding, led to an increase in student numbers from 20/25 to 40/45 (drawn from school archival records). The change of status also saw a change in the length of time students attended the school and led to the need to expand from a model of lower secondary (Years 8 to10) to a full service school offering senior schooling options. In 2002, in an effort to broaden the senior school options, CEP became accredited as a Registered Training Organisation (RTO) which allowed the school to offer Vocational Education and Training (VET) certificate courses as well as Queensland school curriculum offerings.

At the present time, CEP has a student population of 90 young people (and an additional 45 young people in its three outreach programs) across all year levels. Of the 90 young people onsite at CEP, 35 are Indigenous. The outreach programs were developed as a response to the increasing referrals and the inability to service the numbers on site. Each outreach program consists of a teacher and a youth worker (male and female) and 15 young people. The group uses a bus to move between various community venues (e.g., libraries, youth centres, parks, community centres) and to provide the young people with an educational program that is individualised to meet their needs. Due to the areas they service, they do not have much physical contact with CEP but staff are supported by attending staff meetings and professional development opportunities with other CEP staff. The needs of the student population that attend CEP and the outreach programs, are diverse and include young people who:

- have fallen behind educationally and/or have significant academic difficulties or gaps in their learning;
- have become involved in the juvenile justice system and are unable to concentrate on their education;
- have issues with drugs and alcohol;
- are in the care of, or at high risk of being taken into care by, the Department of Child Safety;
- have significant behavioural difficulties that prevent them from successful engagement in mainstream school settings; and,
- have significant mental health issues and/or emotional difficulties that make engagement in education difficult.

According to the typology suggested by Raywid (1994; see Table 2), CEP would fit into the Type 1 school criteria because it offers full time, multiyear educational options with a variety of curriculum choices. While the student cohort is comprised of students from all of the categories proposed by Roderick (see Aron & Zweig, 2003) that is, it is heavily populated with students from group 4 (see Table 3), that is, those that have fallen substantially behind educationally. The school operates using all the characteristics of effective practice proposed by de Jong and Griffiths (see Table 4) and has as its major focus re-engaging young people in learning and supporting them to set their own goals for the future. With re-engagement as a primary focus for young people who attend CEP, it is important to understand the tenet proposed by Aron (2006):

> *"…. Youth do not disconnect from traditional schools because of the failure of any one system. Likewise, reconnecting youth requires collaboration and coordination among multiple youth serving systems, these certainly include school and youth employment and training*

> *programs, but also child protective service systems, the juvenile justice system, and a variety of health and human service agencies, such as mental health and substance abuse treatment agencies, crisis intervention agencies, runaway and homeless youth shelters, and others" (p. 3).*

CEP is situated in a central suburb of Logan City on its own campus. During its long history of operation, the school (program) has provided young people with a place to re-engage with education and participate in meaningful learning. The model used at CEP is summarized as follows:

> *"The distinctiveness of the CEP is found in four interrelated and dynamic elements: common ground for relationships, student outreach, flexible pedagogy, and a relevant curriculum. While these elements of the CEP are not unique to educational provision, they are implemented in a context of staff formation, flexible timetabling, smaller class size, and an overall learning community of less than 100 people" (Flexible Learning Centres: Occasional Paper, 2005, p 5).*

The underlying philosophy of operation at CEP is based on respectful social engagement and respect for the personal dignity of each person. This is achieved in a climate that fosters social democracy through the use of common ground principles of operation, respect, safe and legal, participation and honesty, to which all members (staff and students) are asked to agree. These principles provide directions for group practices that encourage accountability for behaviour and for learning. The flexible pedagogy at CEP is characterized by a focus on individual student needs, an emphasis on developing a learning community, a style of learning that is critically reflective, and the promotion of a culture of success.

Fundamental to a flexible pedagogy is an emphasis on relationship development (Flexible Learning Centres: Occasional Paper, 2005).

The curriculum at CEP is constructed to meet the needs of the individual learner. It begins with an exploration of the strengths and weaknesses the young person brings to the learning community and an awareness of each learner's circumstances An individualized program that is relevant to that particular young person is then constructed. All programs created follow Statutory Authority guidelines for assessment and reporting, the Queensland Outcomes Framework (Queensland School Curriculum Council, 1998) and more recently the Queensland Curriculum, Assessment and Reporting Framework (Queensland Department of Education and the Arts, 2005). A consequence of this highly individualized approach to curriculum is that the program/s is constantly changing as the student population changes. In 2005/2006, in an attempt to capture the 'essence' of what guides curriculum development at CEP, staff developed a 'curriculum statement' based on sound educational theories (Table 5).

Table 5

CEP Curriculum Statement, 2006 (draft)

- The curriculum at CEP is **holistic**. It is the accumulation of all experiences within the program which attempt to create a spirit in which everyone, both students and adults, are affirmed in their own dignity and encouraged to accept responsibility for all their experiences (internal report to the office of non-state schools 2003).

This statement is supported by the theories of humanistic education which believe that the purpose of education is to provide a foundation for personal growth and development so that learning will continue throughout life in a self-directed manner (De Carvalho, 1991). Humanistic education is concerned with the 'whole child', their intellectual, social, emotional and spiritual growth.

- Social learning theory (Bandura, 1993) explains behaviour in terms of continuous reciprocal interaction between cognitive, behavioural and environmental influences. The social learning theorists believe that young people are more likely to engage in certain behaviours (i.e., learning) when they believe they are capable of executing those behaviours successfully (Bandura, 1993).

  This is a critical statement in relation to the young people we work with in that most often they enrol at CEP following an extended period of time in which they have experienced failure. They initially do not see themselves as learners and are reluctant to engage in a learning environment. To overcome this and develop a modicum of self-efficacy, young people need to **experience success** in some form.

- Vygotsky supports the social learning theories in his belief that social interaction plays a fundamental role in the development of cognition. Another crucial aspect of Vygotsky's work is the notion of a '**zone of proximal development'**. He explains this as the distance between the actual development level (as determined by independent problem solving) and the level of potential development (as determined through problem solving under adult guidance or in collaboration with more capable peers) (Vygotsky, 1978).

  Vygotsky's thinking strongly underpins the testing or profiling that we do at CEP with all young people. Once their level of 'actual development' is established we can provide opportunities for success through appropriate programming that allows young people to operate within their particular zone of proximal development. **Progress is therefore individual, not grade/age related.**

- Young people at CEP are placed in specific classes for literacy and numeracy instruction according to a number of factors such as, their age and level of maturity, their cognitive functioning (as determined by tests), and their stated goals. This **non-graded** approach to

grouping is supported by research such as that of Slavin (1987). Slavin found that when children were streamed into classes according to their reading/math ability (known as the Joplin Plan) there were significant gains in both reading and math achievement. Furthermore this type of grouping was found to prevent the social and emotional damage caused by placing low-achievers in a graded (grouped by age) class where they experience failure. Other researchers found that ability grouping led to more positive attitudes and behaviour in students as they began to experience success (perhaps for the first time) and started to see themselves as **learners** (Slavin, 1987). This approach is also a part of the 'transactional model of education', which believes that learners are expected to be at different stages and to develop at their own pace and in their own ways: thus, there is no conception of **failure**.

- Another major influence on the thinking at CEP is in the work of James Gee; Discourse analysis (1990). Gee proposes that 'Discourses' are 'ways of being in the world' or "….. is a socially accepted association among ways of using language of thinking, feeling, believing, valuing, and of acting that can be used to identify oneself as a member of a socially meaningful group or 'social network', or to signal (that one is playing) a socially meaningful 'role'"(p.143). Gee also proposes that Discourses are intimately related to the distribution of social power and hierarchical structure in society and that control over certain **Discourses** can lead to acquisition of social goods (money, power, status).

- Another important tenet of Gee's (1990) work is the difference between 'acquisition' and 'learning'. **Acquisition** is the process of acquiring something subconsciously by exposure to models, trial and error and practice, without formal teaching. It happens in natural settings which are meaningful and functional. Learning however, is a process that involves conscious knowledge gained through teaching or through certain life experiences that trigger conscious reflection and involves explanation and analysis. He argues that Discourses can be mastered through acquisition not learning. That young people develop best when they are 'enculturated' (apprenticed) into

social practices through scaffolded and supported interaction with people who have already mastered the Discourse (Gee, 1990). **Acquisition must at least precede learning**. Gee writes that many minority and lower socioeconomic students have great difficulty accommodating to, or adapting to, certain 'mainstream' Discourses, in particular, many school-based Discourses. These Discourses often conflict seriously (in values, attitudes, ways of acting, thinking, talking) with their own home and community-based Discourses.

Using Gee's ideas, we can define 'literacy' as "**mastery of, or control over, a secondary Discourse**". When viewed this way literacy can be seen as 'liberating' in that it gives young people the meta-language to critique their primary, and any secondary, Discourse/s, and allows them access to **equality of opportunity.**

Class sizes at CEP do not exceed the student-teacher ratio of 10:1 and in cases where the academic or social needs are higher than normal, classes cmay contain two adults. Common classroom practices include:

- Curriculum designed in consultation with the young people and based on their current interests;
- Focus on literacy and numeracy development across all key learning areas;
- Element of individual choice added to most curriculum activities;
- Sequential, scaffolded learning experiences that assist young people to draw on prior knowledge and to make the links with new content;
- Learning activities that provide opportunities for visual, auditory, tactile and kinaesthetic learning experiences;
- Reinforcement of learning through computer-aided instruction;
- Encouragement of self-monitoring and self-evaluation for academic and behavioural progress; and,

- Focus on negotiation through regular meetings that develop skills in problem solving, choice making, group work, accepting responsibility, and setting realistic goals.

Developing respectful relationships with others is a major focus of the curriculum at CEP and is evident in all activities in which young people engage (Flexible Learning Centres, 2005). Young people are expected to follow the four principles (respect, participation, honesty and safety) at all times and when transgressions occur they are actively involved in repairing the situation. This approach, whilst labour intensive, has been accepted by staff at the school as the most important facet of the work they do. Many staff would agree that they have observed young people transfer the skills they develop to other areas of their life.

Staff Selection and Training

Selection of staff at CEP is no different from selection in any other educational sector. Positions are broadly advertised both externally and internally (within the Christian Brothers schools and more recently within the Flexible Learning Centre Network) and selected applicants attend an interview with the Principal and the coordinator. Likewise there is no specific training given or required to work in the setting although work history of applicants is taken into account when determining if the applicant has experience in the field. Upon taking up a position the new staff member is mentored by an existing staff member and opportunities to debrief and reflect on their experiences is offered on a regular basis. External supervision is also offered to all staff that work at CEP. The school endeavours to keep a balance of teachers and youth workers in order to maintain an holistic approach to education. However, given the structures surrounding remuneration in which youth workers receive lower wages and less holiday time than their teaching counterparts, this balance is often difficult to attain. Consequently, keeping this balance of disciplines is an ongoing issue and one that needs to be addressed at a systemic level as AEP become more accepted in the field.

Despite considerable research emerging on many facets of alternative education, the area of staff training and ongoing professional development have received limited research attention. This could be a result of the complexity of the settings and the staff that operate them, with some settings being registered schools and others being short-term programs, and staff being drawn from a variety of disciplines (e.g., education, youth work, and counselling). Many alternative education professionals would claim that the limited research is due to a lack of understanding of the work that occurs in these settings by policy makers and government sectors, which leads to a reluctance to fund projects (Owen, 2004). Consequently in exploring the issue of staff training, I will draw on both my own experience, having worked in an AEP for 12 years, and a summary of a discussion with AEP practitioners during a forum, the Learning Choices Expo held in Sydney in 2004 by the Dusseldorp Skill Forum (DSF).

The Dusseldorp Skill Forum is an independent, not-for-profit body that works with communities, industry, government and non-government organisations to fulfil its mission of "…. Enabling all Australians to reach their potential through the acquisition of skills and knowledge" (*http://www.dsf.org.au*). As such the DSF provides an opportunity for those who work in innovative educational developments to network and share the work that they do. In 2004 the DSF held the 'Learning Choices Expo' that brought together a number of people from AEP across Australia to share their work, network with each other, and explore issues of relevance. One such exploratory workshop conducted during the Expo entitled, "Have we got what it takes?" brought together practitioners from many different programs/schools to discuss issues related to staffing and ongoing support of staff in AEPs (Owens, 2004). The discussion workshop considered topics such as what skills and training were needed to work in AEPs, professional development of staff, and staff recognition and rewards.

In relation to the skills and training needed for staff to work in AEP settings, workshop participants identified three main areas for consideration, namely teaching and learning,

counselling and caring, and managing and resourcing. For effective teaching and learning to occur it was deemed vital that workers had a desire to work with young people in this age group and a genuine interest in adolescents. It was also considered important that they had a good understanding of 'youth culture' and the issues that exist for youth in today's society. A broad general curriculum knowledge that comprised of expertise in literacy and numeracy, life skills and personal development, and/or practical skills that may help to develop employability skills were considered necessary. However, it was overwhelmingly agreed that being willing and able to engage with young people at an 'affective level' was a priority over engaging at a cognitive level alone. Unfortunately this level of expertise is both hard to find and more importantly, hard to keep as the transient funding nature of many programs prevented appropriate professionals with theoretical and pedagogical expertise from achieving long-term employment in the AEP. Likewise the lack of opportunity for career advancement in AEP led to those with expertise moving on to easier and less stressful positions in other systems. The main recommendations that arose from the workshop were that an accredited pre-service training course for workers in alternative education settings be established and that it would lead to a qualification that was recognised and valued by education systems and the community sector (Owens, 2004).

The professional development needs of workers in AEP fell into two distinct categories; teaching and learning and self-preservation. Enabling teachers (and others engaged in the work of AEP) to be responsive to the students' needs was identified as an ongoing necessity. This included aspects such as curriculum development in the context of AEP, real-life/authentic learning and assessment, understanding learning differences/difficulties (such as ADHD), and how to validate the less obvious learning that occurs in AEP. The participants in the workshops agreed that there was generally a lack of professional development that focussed on and was relevant to the context of their work and that they were generally reliant on their

own networking to provide them with professional development. A major area of concern was in relation to self-preservation in what was considered a highly stressful work environment. A significant number of the young people engaged in these programs/schools present with issues such as homelessness, drug and alcohol issues, involvement with criminal justice, dysfunctional family backgrounds, histories of abuse, and mental illnesses. Workers engaging in these environments often struggled with the overwhelming needs of the young people and prioritising the issues presented to them. Workshop participants identified the potential for emotional 'burnout' to be high and suggested that professional development should address issues such as; stress management, crisis intervention, and developing resilience (Owen, 2004). However, the reality due to the lack of sustainable funding in many of the programs was that such professional development was rarely forthcoming and that consequently programs/schools often had to deal with high staff turnover and stress.

Another factor that was identified as crucial to longevity in working in AEP was that of reward and recognition. For many people who work in AEP this is not a reality and instead they find themselves and their program 'hidden' from society, either through their physical location or through their isolation from peers in other systems. As many of the workers in AEPs are from the youth work discipline, equity with teachers in AEP is a major issue for them. Youth workers face an ongoing struggle of inconsistent remuneration with unpaid leave during school holidays and significantly lower wages than their teaching counterparts. In many programs they also struggle with instability in funding which adds further stress to their work. Although teachers in AEP are more adequately remunerated for their work, they too identified some issues. They often work with less than adequate resources and need high levels of creativity to provide the young people with stimulating learning environments and quality programs. Career prospects are poor and for many teachers moving up meant 'moving on' as the career paths offered by other educational systems simply did not exist in AEP. All

participants in the workshop perceived that the work they were involved in was generally not valued by other systems and that they were not recognised for the work they did (Owen, 2004).

Staffing at Centre Education Programme

At the time of the study, staffing levels at Centre Education Programme includes a coordinator, a curriculum coordinator/special needs teacher, three teachers, two Indigenous teachers, five education support workers/youth workers, two administration officers who share one full-time position, and a variety of outsourced sessional workers for areas such as music, art, and workshop. The current student enrolment is 90 young people of whom 35 are Indigenous. In addition there are three outreach programs linked to CEP each consisting of a teacher, a youth worker and 15 young people.

Of the 90 young people enrolled at CEP, 35 are Indigenous. At the instigation of the Indigenous teachers on site at CEP, and in consultation with the local Indigenous community, the Indigenous students are streamed for part of each day in the Indigenous Unit. The Unit is comprised of two teachers, two education support workers/youth workers and a variety of sessional workers for various cultural lessons which equates to a staff to student ratio of 1:9. Indigenous staff believe that young people have more opportunity to develop a sense of identity (in relation to their Indigenous heritage) when they are immersed in a learning environment that focuses on and values their Indigenous history. The Unit approaches curriculum from an Indigenous perspective and promotes culturally appropriate approaches to learning and a curriculum content that is based on Indigenous history and social issues. Embedded within this content is a skills based focus on literacy and numeracy development. For the rest of the day the whole school combines to attend a variety of classes that provide young people with choices in their learning such as music, art, computer studies, sport, and workshop activities.

Professional development (PD) in schools such as CEP is highly individualised according to the perceived needs of the staff and students. Although some teaching staff access school/curriculum related PD, most of the commercial PD offerings are irrelevant to the unique needs of CEP (and other AEP). The most effective PD occurs through staff reflecting and sharing their practices with each other and/or staff from other schools/programs that are similar in nature. Due also to the transient nature of the student population, needs vary at different times and PD will be sought as a response to a particular issue that exists at a given time such as high levels of drug and alcohol problems or high levels of physical violence. Again one would hope that as AEPs become more widely accepted, the range of PD opportunities will expand.

Although CEP has a relatively stable funding arrangement due to its registration as a non-state school and registered training organisation status, many of the issues identified in the Dusseldorp Skill Forum workshop apply in this environment. Isolation is a major issue for CEP in relation to its physical location as well as its professional network. The school is located in an industrial estate beside a busy motorway with no public transport access available. School vehicles are used to drive the young people to and from school each day and not all service providers in the area are aware of the school. Thus it is important, yet somewhat time consuming, for staff to develop networks in the local community and ensure that others are aware of the school's existence. Although CEP is a registered school and has recently become a part of Edmund Rice Education Australia (EREA), links with other EREA schools do not lead to the development of a professional network due to the distinctive nature of CEP compared with other EREA schools. More often professional networks are developed outside of school settings with programs that cater for a similar cohort of young people. For this reason networks such as the Dusseldorp Skills Forum and EdgeWork (a network of Edmund Rice ministries that work on the margins of mainstream society) become a more viable professional

development arena than school networks. With recent expansion of the CEP model to that of a network of EREA 'Flexible Learning Centres', CEP now has the opportunity to belong to a school network that can offer relevant and authentic support.

Edmund Rice Education Australia

Prior to October 2007, CEP was one of a number of school and ministries governed by the Christian Brothers within the Xavier Province (Queensland and Northern Territory). Following a process of consultation and planning initiated by the International Chapter of Christian Brothers, a restructure occurred in which all individual provinces across Australia, New Zealand and Papua New Guinea, came together to form one province of Oceania. Within this Oceanic structure it was also decided to separate the administration of schools from non-school ministries and thus Edmund Rice Education Australia (EREA) was founded. Edmund Rice is the founder of the Christian Brothers and his teachings provide the philosophical basis for the school charter and mission statement. At present EREA governs 40 schools across Oceania of which CEP is included.

Growth of the Flexible Learning Network

Since becoming registered as an independent school, CEP has continued to receive more referrals for enrolment than the places available. In response to these ever-increasing numbers, the school has begun an expansion process that has seen the development of a 'Flexible Learning Centre Network' (in 2006) with a number of schools across Queensland. The concept of 'flexible learning' as opposed to 'alternative education' was adopted as a means of clarifying the target population and disassociating from current alternative models that do not operate in the same way (such as Type II and III models proposed by Raywid,

1994, see Table 2). The term 'flexible learning' also has connotations of inclusivity unlike the term 'alternative' which connotes a more exclusive pathway.

Some of the programs that belong in the network were already operating as youth reengagement programs but did not have long-term sustainable funding and were seeking support to establish school registration. Others in the network were established from the ground up, with the support of community agencies and/or educational systems. The Flexible Learning Network is part of the system of Edmund Rice Education Australia which is operated by the Christian Brothers. Education Queensland and the Queensland Catholic Education Commission also play significant roles in supporting the work of the network as do community agencies such as local councils. As well as the four additional school campuses, the network also operates six 'outreach programs' which are small groups of 12 to 15 students and two staff who operate using a vehicle and local community facilities to offer an educational program to young people who are either not near a Flexible Learning Centre or who are unable to gain a place in one. The outreach programs were a direct response to the overwhelming referral numbers and the desire to keep the schools a manageable size. Consultation with education stakeholders continues to occur and it is envisaged that the network will continue to grow in response to the increasing referrals.

Conclusion

Many AEP are short-lived due to the instability of funding in the area and/or unclear foci or goals (Aron, 2006), consequently investigating the operational principles of particular programs is difficult. Centre Education Programme has been operating as an AEP for a considerable length of time (since 1983) and thus was able to provide a 'story' of development to enrich and support the present study. However, as with any program that aims to meet the needs of disenfranchised youth, CEP is dynamic in nature and will continue to evolve as the

needs of young people change over time. This chapter has aimed to present the underlying principles of CEP whilst acknowledging the dynamic nature of the program and realising that it will continue to evolve as the community in which it is situated changes.

The next chapter will explore the methodological approaches chosen for the present study and discuss the rationale for their selection.

CHAPTER FOUR

Methodological Approach

The primary aim of the study was to explore a particular group (adolescents with ADHD) within a particular setting (Flexible Learning Centre) and to establish their academic, social and behavioural outcomes. It is important to keep the focus of the research in mind when designing the best methodological approach, the approach that will provide answers to the research questions. This chapter will explore the methodological approaches available to researchers and will explain the thinking behind the chosen methods.

The chapter will begin by exploring methodological approaches available and the strengths and weaknesses of designs with particular focus on the research questions of the present study. This will be followed by a discussion on the qualitative data collection methods used, validity and data analysis and finally, a discussion on the quantitative data collection methods and validity/reliability.

Methodological Approaches

Despite ongoing debate about the differing paradigms of social research, namely quantitative versus qualitative research, the validity of using qualitative research methods has gained popularity in recent years (Kohlbacher, 2006). At a simplistic level, quantitative refers to a method whereby data are collected in the form of numbers whereas qualitative research methods collect data in the form of words or pictures (Cresswell, 2005). Cassell and Symon (1994) present a more in-depth definition of qualitative research as follows:

> *"…a focus on interpretation rather than quantification; an emphasis on subjectivity rather than objectivity; flexibility in the process of conducting research; an orientation towards process rather than*

> *outcome; a concern with context- regarding behaviour and situation as inextricably linked in forming experience; and finally, an explicit recognition of the impact of the research process on the research situation" (p.7).*

The characteristics of qualitative research as defined by Cassell and Symon (1994) were instrumental in guiding the selection of appropriate methods for the present study. As the main aim of the research was to 'investigate' or 'explore' the thoughts and self-perceptions of a particular group (adolescents with ADHD) in a particular setting (a Flexible Learning Centre), from the outset it was clear that qualitative research would best suit the purpose. In view of criticisms of qualitative research, that it is a 'soft science' and mainly exploratory, (Kohlbucher, 2006), wherever possible, quantitative data were used to support and complement the qualitative findings. In essence, the study utilised a 'mixed methods' design with a focus on the qualitative methods.

Mixed method designs can be traced historically to the 1930s when educational and social science investigators combined data collection methods in their studies (Cresswell, 2005). At that time, the use of qualitative research was largely unfounded and thus using mixed methods was perhaps the best means of introducing a qualitative aspect to research. In 1979, a study by Jick on anxiety and job insecurity during organization mergers, became instrumental in validating the mixed method design as a means of providing a, "rich and comprehensive picture" of the phenomenon under investigation (Jick, 1979). Following Jick's work, mixed methods designs were refined over the next two decades as a valid approach to research design. Subsequently, attention focussed on identifying specific mixed method designs that would allow researchers to tailor research methods to best suit their individual studies (Cresswell, 2005).

Cresswell (2005) presented three mixed method designs namely, triangulation, explanatory, and exploratory designs. Table 6 compares the three types of mixed method designs in relation to the priority, the sequence of data collection and how the data analysis. The three types of mixed method designs will now be summarised in terms of their purpose, strengths and difficulties.

Table 6

Comparison of Mixed Method Designs.

Method	**Priority**	**Sequence**	**Data Analysis**
Triangulation	Equal priority and value is given to both forms of data.	Both forms of data are gathered simultaneously.	Qualitative themes are quantified and compared to quantitative variables addressing the same themes.
Explanatory	Priority is given to quantitative data collection and analysis. Qualitative data are introduced in a second phase of the research.	Quantitative data are collected in the first sequence followed by qualitative. Often occurs in two distinct phases.	Qualitative data are used to refine the results from the quantitative data.
Exploratory	Emphasis on qualitative data.	Often occurs with qualitative first followed by quantitative.	Quantitative data are used to build on and/or explain the qualitative findings.

Source: Summarised from Cresswell, J.W., 2005. *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research.* New Jersey: Pearson Education Inc.

Triangulation

The purpose of a triangulation mixed methods design is to "simultaneously collect both quantitative and qualitative data, merge the data, and use the results to understand a research problem" (Cresswell, 2005, p. 514). A strength of this design is that it combines the advantages of both forms of data collection. Quantitative data are used to support generalization of findings and qualitative data provide information about the setting or the context of the research. A common difficulty associated with this design is in the need to "…translate one form of data into the other form to integrate and compare databases" (Cresswell, 2005, p. 515).

Explanatory

This form of mixed methods design, sometimes known as a "two-phase model", is currently the most popular form in education research (Cresswell, 2005). The main purpose is to expand and elaborate on the quantitative findings through qualitative data. It is usually completed in two distinct parts or phases, quantitative first followed by qualitative. A strength of this approach is that, unlike triangulation, it is not necessary to, "converge or integrate two different forms of data" (Cresswell, 2005, p. 516). The design also uses the best aspects of both approaches but uses one approach (qualitative) to refine and expand on the other (quantitative). Difficulties in using this design come when the researcher must choose which aspects of the qualitative data to use and which to reject. Another difficulty associated with this design is that it is labour intensive and requires considerable time to collect both forms of data (Cresswell, 2005).

Exploratory

The main purpose of the exploratory design is to "….gather qualitative data to explore a phenomenon and then collect quantitative data to explain relationships found in the qualitative

data" (Cresswell, 2005, p. 516). This approach is popular when the quantitative instrument is not readily available and needs to be designed. A strength in this approach lies in the fact that the quantitative data is 'grounded' in the qualitative data obtained from the participants. However, as with the explanatory design, difficulties may arise when the researcher is required to select the themes to measure. It is also a time consuming and labour intensive approach.

The present study utilised an exploratory mixed methods design to best suit the exploratory nature of the research question/s. Given that the focus of the present study was on the academic, social, and behavioural outcomes of the participants it seemed that any findings could be consolidated with quantitative data. Although classic exploratory designs begin with the qualitative data collection (Cresswell, 2005), this study began with quantitative measures so that data could be collected at two points in time, nine months apart. In this way, progress (or changes) in self-perceptions and outcomes could be quantitatively measured. However, the major focus of the data collection was qualitative in nature and primarily involved case studies and interviews.

Qualitative Data Collection Methods/Strategies

Case Studies

According to Yin (2003), "…the distinctive need for case studies arises out of the desire to understand complex social phenomena…. the case study method allows investigators to retain the holistic and meaningful characteristics of real-life events" (p. 2). This definition encompasses the aims of the present study and places the focus of the study on the social phenomena under investigation (changes in participants) grounded in a real-life setting (a Flexible Learning Centre). Case study research consists of a detailed investigation often involving multiple types of data collected over a period of time. The study can be exploratory or explanatory in relation to the data collected and analysed (Yin, 2003) and for the purposes of

this study was primarily exploratory. Hartley (2004) claims that a case study is not a 'research method' but is instead a 'research strategy' chosen for its ability to encompass all types of data collection and therefore enrich the chosen research method. Case studies enhance exploratory mixed method design through the use of multiple sources of data collection (school records, attendance records, historical data, testing results, interviews), with analysis occurring within and across individual cases.

Interviews

The interview is probably the most widely used strategy/method in qualitative research (Cresswell, 2005). In the present study, the interview was an instrumental part of the data collection and served a variety of purposes namely providing insights into personal perceptions of interviewees, clarifying findings from quantitative data for validation purposes, and exploring issues that arose during the interview process. To facilitate rich/detailed data, a semi-structured interview was used, that allowed the interviewee to be an active participant in the interview process and allowed the interviewer to explore issues that had not necessarily been considered during the design process (Cresswell, 2005). Given also that the present study was one of multiple case studies (i.e., five young people), the semi-structured interview approach provided the opportunity for cross-case comparability (Cresswell, 2005).

Participant Observation

Due to the exploratory nature of the present study, it was necessary to broaden the scope of data collection to allow improved validity and to support (or refute) interpretations of findings. Participant observation was chosen as one method of data collection for the present study. Used as a data collection method for over a century, most commonly in the fields of anthropology and sociology (Kawulich, 2005) participant observation has been defined as, "the

systematic description of events, behaviours, and artefacts in the social setting chosen for study" (Marshall & Rossman, 1989, p. 79). As a data collection method, participant observation has both advantages and disadvantages. Advantages of using the method include: having access to the backstage culture of the setting in question; the ability to provide rich, detailed insight into the behaviours/intentions/events under observation; and the possibility that the observations will support findings from other data collection methods.

Disadvantages of participant observations include: observer bias (to be discussed below); gender differences in interpretation of observations (DeWalt & DeWalt, 2002); and, lack of skills/experience in systematic observation techniques. All of these factors were considered during the design process and strategies to overcome the inherent problems associated with participant observation were developed and will be discussed below.

The degree to which the researcher involves himself/herself in participation in the setting under study makes a significant difference to the quality of data collected (Kawulich, 2005). In this particular study, the researcher has worked in the setting for 12 years and thus is a complete participant in the setting with a history of 'prolonged engagement' which, according to Lincoln and Guba (1985), facilitates trustworthiness. However, to facilitate openness and honesty in actions, the participants of the study were aware that all interactions during the period of research could be used for the purposes of the research. During the interview process many of the observations made were mentioned to the interviewees to allow them input into the interpretation of the observations. This increased the validity of some observations. A limitation of the participant observation role in this particular study was due to the primary role of the researcher being one of participant and not one of observer and thus the potential to overlook pertinent observations was a reality.

Two aspects were under scrutiny during the observation period, the setting and the participants within the setting. Observations related to the setting focussed on: approaches to

teaching/learning; physical environment (whole school and classroom level); processes used dealing with issues (i.e. conflict resolution); aspects of social learning; and, the culture of the setting. Due to the prolonged engagement of the researcher with the particular setting, it was unnecessary to design an observation schedule, instead determining focus areas allowed the researcher to categorise observations according to the aspects under scrutiny.

When observing participants in the study, the main focus was in relation to the progress they were making within the setting (academically, behaviourally, and socially). Observations were focussed around these three areas and were mostly unplanned although when patterns emerged more focussed observations were planned to ensure reliability of initial interpretations.

Qualitative Validity

Lincoln and Guba (1985) propose four criteria for judging the soundness of qualitative research, namely, credibility, transferability, dependability, and confirmability. These will be discussed in relation to the present study.

Credibility

Credibility refers to establishing that the results of the research are credible or believable from the perspective of the participant. As the purpose of this study was to view changes in a certain group (adolescents with ADHD), across time and in a particular setting (a Flexible Learning Centre), it would appear that the participants in the study are the most able to legitimately judge the credibility of the results.

In this particular study, the issue of credibility was addressed during the interviews which occurred after a significant period of observation (at least nine months). The flexible interview structure allowed the interviewer to present observation interpretations to the

interviewee for clarification or corroboration. In this way participants in the study became active in establishing the credibility of findings. Lincoln and Guba (1985) refer to this approach as 'member checking' and believe that it is a crucial technique for establishing credibility.

Another procedure that was used to enhance the credibility of the study was that of 'prolonged engagement' in the field (Cresswell, 2005). The researcher in the present study has a solid understanding of the culture and context of the school community, having had extensive experience in the field. Due to this prolonged engagement in the research site, the researcher has already established trust and rapport with the participants which made them comfortable to disclose information and collaborate in the research. Fetterman (1989) contends that, "…working with people day in and day out for long periods of time is what gives (ethnographic) research its validity and vitality" (p.46).

Transferability

Transferability refers to the degree to which the results can be generalised or transferred to other (similar) settings. In order to enhance the possibility of successful transferability, it is necessary to present a thorough picture of both the setting and the participants so that future researchers can make judgements on whether they can transfer the results to a different context (Lincoln & Guba, 1985).

Whilst transferability is an appealing concept in research, the distinct nature of the particular study is not conducive to generalisation. For example, the participants were a definitive group (young people with ADHD) in a very distinct setting (a Flexible Learning Centre) and were exposed to a particular approach to teaching and learning that is atypical of most classroom/school settings. As transferability to other situations depends on the degree of similarity between the original situation and the situation to which it is transferred, the

researcher cannot guarantee transferability, and can at best provide sufficient information for the reader to determine whether the findings are applicable to a new situation (Lincoln & Guba, 1985).

Dependability

Dependability is concerned with replicability and repeatability of findings (Lincoln & Guba, 1985). Given the individualistic and ever-changing nature of the context in which the study takes place, the idea of replicating is fraught with difficulties. However, the present study aimed to increase dependability by being open about the changes that occurred during the research and how these changes affected the way the study was approached. Lincoln and Guba (1985) believe that, "Since there can be no validity without reliability (and thus no credibility without dependability), a demonstration of the former is sufficient to establish the latter" (p. 316). With this in mind, the present study focussed on providing strong credibility to the findings and providing a rich description of the setting and participants to enhance replicability and repeatability of the findings.

Confirmability

Confirmability refers to the degree to which the results could be confirmed or corroborated by others. Traditional research refers to objectivity and posits that quantitative research which relies on measures is relatively value-free and therefore objective, whereas qualitative research which is concerned with interpretations is value-bound and therefore subjective. However, Lincoln and Guba (1985) question whether statistical measures are indeed truly objective and whether pure objectivity is ever really attainable.

The term confirmability as opposed to objectivity, refers instead to the degree with which the researcher can demonstrate the 'neutrality' of the research interpretations (Lincoln &

Guba, 1985). In this particular study the main approach to enhancing confirmability was that of an external audit. An external audit involves having a researcher not involved in the research process, examine both the process and product of the study (Lincoln & Guba, 1985). The purpose of this approach is to evaluate the accuracy of the findings, interpretations, and conclusions of the study and to establish whether or not they are sufficiently supported by the data. The present study was thoroughly supervised and guided by an expert panel that provided input, determined credibility and validity, and suggested directions throughout the research project. Through this process, the completed narrative discussion gains credibility (Creswell & Miller, 2000).

Whilst great care was taken throughout this study to ensure that validity, and all its subsequent factors, were given due consideration, it is acknowledged that in any qualitative study 'absolute truth' is rarely attainable and at best one can hope for interpretations that are open to scrutiny from others (Cresswell, 2005).

Qualitative Data Analysis

Qualitative researchers most commonly use inductive methods of data analysis. Inductive data analysis is concerned with how critical themes 'emerge' from the data and requires the researcher to organise the raw data into logical, meaningful categories; examine these categories in a holistic way; and, communicate these findings/interpretations to others (Hoepfl, 1997). Cresswell (2005) suggests a six step approach that facilitates effective inductive data analysis and that was implemented in the present study. The six steps are:

1. Preparing and organising data;
2. Exploring and coding the data;
3. Describing findings and forming themes;
4. Representing and reporting findings;

5. Interpreting the meaning of the findings; and,
6. Validating the accuracy of the findings.

(Cresswell, 2005, p. 230).

1. Preparing and Organising the Data

In the early stages of the data collection, data in its raw form consisted of archival records, observation notes, testing instruments, and audiotaped and transcribed interviews. The first task in organising data is to determine a system that will facilitate easy access to the data (Cresswell, 2005). As the present study was primarily one of case studies, the most logical system was to organise the materials by case. With five cases in the study, it was merely a matter of setting up files for each case and organising the data in relation to each of the participants in turn.

All testing data were scored and placed in the participants' files. The interviews, as mentioned previously, were transcribed by an independent third party and provided to the researcher in a format that allowed formatting changes to be made that would assist in subsequent coding of data. The participant files also contained school records such as attendance, previous school history, and enrolment interview notes. General observations of the participants were also noted and placed in the files although as the observations were ongoing throughout the study period, more detailed and targeted observation notes were added continually.

At the beginning of the project, gatekeeper permission was sought from the Christian Brothers through the Xavier Province Centre administration. Permission was granted and subject to the Xavier Province Centre Privacy Policy that required all personal information on participants and their parents/carers to be kept in a secure location for the duration of the study

and to be destroyed on completion of the study. All policy requirements were strictly adhered to during the course of the study.

2. Exploring and Coding the Data

Initial exploration of data involves reading all that is available to gain a general sense of what is. As an integral part of this study involved accurately representing the participants, a considerable amount of time was spent on this aspect so that the researcher could ensure that her perceptions of the young people involved could be confirmed through the data collected.

Interview transcriptions were hand coded due to the relatively small amount of transcription data and the desire to continually view the data as 'a whole'. The data were coded according to identified categories and themes, a process referred to as 'open coding' (Strauss & Corbin, 1990). When using open coding, the researcher identifies and tentatively names the conceptual categories (codes) for grouping whilst always being open to modifying and/or replacing the categories in subsequent stages of the analysis (Hoepfl, 1997, p.55). Over time, and subsequent readings, codes were grouped according to similarities in their theme and/or perceived irrelevance. From the remaining categories/codes, themes began to emerge.

3. Describing Findings and Forming Themes

Although general themes had been identified during the initial coding, the grouping of codes allowed the researcher to refine these themes and/or identify previously unexpected themes. These themes would form the basis of the data analysis and would be explored in relation to the additional data available. Analysis would also consider whether the identified themes were unique to individual participants or common across all. This approach assisted the researcher to analyse the data within-case and across case.

4. Representing and Reporting Findings

The primary form of reporting findings in this particular study was that of 'narrative discussion' (Cresswell, 2005). A narrative discussion is a written passage that summarises in detail the findings of the data analysis and most often includes participant voices in the form of direct quotes. The primary aim of the narrative is to provide a "…. Rich, tightly woven account that closely approximates the reality it represents" (Strauss & Corbin, 1990, p. 57). As mentioned previously,the aspect of transferability of research findings is increased when the narrative is rich and detailed.

5. Interpreting the Meaning of the Findings

Qualitative researchers acknowledge that personal views cannot be kept separate from interpretations and thus must include personal reflections on the meaning of the data (Cresswell, 2005). The credibility of the personal reflections in this particular study were enhanced by the length of time the researcher had spent as an active participant in the setting (12 years) and her relationship with the young people involved in the study.

Whilst interpreting the findings of this study references were made to literature (as per the literature review) that either supported or refuted previous findings. However, given the limited research in the area of 'flexible learning', new ideas were proposed and the need for future studies became apparent. The data analysis included limitations of the study and recommendations for future investigation.

6. Validating the Accuracy of the Findings

The sixth step in data analysis proposed by Cresswell (2005) is that of validating the findings. This aspect has been discussed in some depth previously in the section on 'Qualitative Validity' (p.52) but to summarise, the principal forms of validity checking that

supported this study were that of member checking and external audit. However, as also mentioned previously, it should be acknowledged that in any qualitative study 'absolute truth' is rarely attainable and at best one can hope for interpretations that are open to scrutiny from others.

Quantitative Data Collection Methods

The present study was primarily a qualitative study that utilised quantitative data to consolidate the qualitative findings and thus improve their validity. As the research aimed to identify progress in academic, social and behavioural outcomes, qualitative data alone would not offer the same objectivity that quantitative test scores could achieve. Despite the limited use of quantitative methods in the present study, processes that exist for implementing quantitative studies need to be acknowledged and discussed.

As with qualitative data, quantitative data collection consists of a number of steps. According to Cresswell (2005) there are five steps in the quantitative data collection process: deciding on participants; obtaining permission to study participants; identifying the types of measures that will answer the research questions; locating the instruments to use; and, collecting the data.

1. Deciding on the Participants

The participants in the present study were young people (adolescents) with ADHD who attended a Flexible Learning Centre. The young people were selected from a group at the school who had indicated on enrolment that they had a previous medical diagnosis of ADHD. Although this group at the beginning of the study numbered 30, only five young people chose to participate in the study and this self-selection was used to determine the final participating group. Cresswell (2005) refers to this procedure for selecting participants as "Convenience

Sampling" (p. 149) in that the participants are chosen because they are willing and available to be studied. Unfortunately, it cannot be said with confidence that these individuals are representative of the population in question (young people with ADHD) however, as the study was focussed on qualitative data and the resultant narrative, it was hoped this limitation could be overcome.

2. Obtaining Permission to Study Participants

Obtaining permission from the participants ensures that they understand the study purpose and are treated ethically throughout the study. Permission to study the participants within a certain setting (i.e. Flexible Learning Centre) ensures that the organisation in charge of the site is fully informed of the intentions of the study and the potential benefits to the participants and the organisation. In the present study, three forms of permission were sought, namely, ethical clearance from The University of Queensland Social and Behavioural Sciences Ethical Review Committee (see Appendix 1), gatekeeper permission from the Christian Brothers through the Xavier Province Centre administration (see Appendix 2), and permission from each of the participants and their parents/carers (see Appendix 3).

3. Identifying the Types of Measures that will Answer the Research Questions

The focus of the research questions was the academic, social and behavioural outcomes (progress) and thus the variables for measurement were drawn from these three areas. The primary focus of the testing results was performance measures which Cresswell describes as "….. assess(ing) the individual's ability to perform on an achievement test, intelligence test, aptitude test, interest inventory, or personality assessment inventory" (Cresswell, 2005, p. 154). The performance measures used in the study were assessed at two points in time, as a pre- and post-test and to establish whether any progress had occurred. Given that the quantitative data

would be used to support the qualitative findings of the study, it was decided that existing instruments already used in the school would be sourced.

4. Locating the Instruments to Use

Historically, the site of the study used a battery of tests to determine benchmarks and measures of progress with each young person enrolled in the school. Rather than source alternative instruments, it was decided to continue with the tests used by the school as long-term reliability of results had already been established (Cresswell, 2005). Four of the five tests used for the study were chosen from this battery of tests, namely, the PROBE reading test, the South Australian Spelling Test, the Test of Whole Number Computation, and the Strengths and Difficulties Questionnaire- II. An additional instrument was required for the behavioural outcome area and after extensive research on available tests the Strengths and Difficulties Questionnaire (SDQ) was chosen. The main reasons for this choice were the availability of the test (freely available for researcher use), its brief format, the simplicity of use for participants, ease of scoring, and its validity and reliability from previous studies (see Validity below).

All tests used fell into two categories, norm-referenced tests and criterion-referenced tests. Norm-referenced tests are tests where an individual's grade is a measure of how well he or she did in comparison to a large group of test takers (Cresswell, 2005). Criterion-referenced tests are tests in which an individual's score is a measure of how well he or she did in comparision to a criterion or score (Cresswell, 2005). Four of the tests used were norm-referenced tests with Australian norms. The fifth test (the Test of Whole Number Computation), whilst part of a larger norm-referenced test, was used as a criterion-referenced test in that the 'progress' was deemed to be a higher score on the second test (i.e., the criteria were 39 right out of 39 questions).

5. Collecting the Data

As previously mentioned all of the testing instruments used were performance measure tests and thus had standard administration procedures that were strictly adhered to during the study and will be discussed further in Chapter 5. Data gathered were stored in files relating to the individual participants and were locked in a secure location for the duration of the study.

As with qualitative data collection and analysis, issues of reliability and validity exist for quantitative data and need to be considered to ensure that the scores obtained from the tests are a true reflection of the progress made by the participants. The next section will introduce the instruments chosen for the study and discuss them in relation to their reliability and validity.

Quantitative Data: Reliability and Validity

As the quantitative data from the study was used primarily to support the qualitative findings, tests were chosen for their ability to address progress in the areas under study; academic, social and behavioural outcomes. It was, however, important to ensure that the tests used yielded results that were reliable and valid so as to improve the overall findings of the study. Reliability in a test refers to how well the scores from the test are stable and consistent (Cresswell, 2005). Stability means tests should be almost the same when administered multiple times and consistency means that tests should have closely related questions that should be answered the same way. Validity in a test means that, "…the individual's scores from an instrument make sense, are meaningful, and enable you, as the researcher, to draw good conclusions from the sample you are studying to the population" (Cresswell, 2005, p. 162).

One way to measure reliability in a testing instrument is through the test-retest reliability procedure in which the same test is administered to the same group of participants over two points in time. Reliability is established if the test results correlate over the two

testing periods (Cresswell, 2005). As mentioned previously, four of the five tests used in the study had been part of a battery of tests used at the school for a number of years. Stability and consistency of results had been established prior to the use of the tests in the present study. The fifth test (SDQ) had research supporting its reliability (Hawes & Dadds, 2004).

Validity of a test can be reported in different forms, content validity, criterion-referenced validity, and construct validity (Cresswell, 2005). Content validity refers to how well the questions on the test represent the content or skills being assessed. Criterion-referenced validity refers to how well the scores on a test predict an outcome one would expect. Construct validity is concerned with whether the scores obtained in the test are a good measure when they are subjected to statistical analysis (Cresswell, 2005). Hubley and Zumbo propose that construct validity of a test can also be established through practical interpretation, through examination of the relevance and use of the test scores (do they give us the information we require?), and the consequences of the test scores (are they useful for policy decisions?) (Hubley & Zumbo, 1996). In the present study, construct validity of four of the five tests was supported in the manner suggested by Hubley and Zumbo. The tests had been used for a number of years in the setting and had successfully provided the teachers with information they required (current level of functioning) as well as guiding policy decisions for the school (identification of areas of need).

The five tests used will be briefly discussed in terms of their internal reliability and, if available, external validity.

Prose Reading Observation, Behaviour and Evaluation of Comprehension (PROBE)

The PROBE (Parkin, Parkin, & Pool, 2002) was designed and written by a team of specialist education practitioners from Australia and New Zealand. It was designed for use with students from Years 3 to 10 but is able to be used with younger readers and adults. To

reduce bias and allow for more accurate evaluation, the 40 original tests were produced in Standard International English and were (as much as possible) culturally and geographically non-specific. The texts include both non-fiction and fiction in acknowledgement of the differing demands each make on the reader. The reading ages of the texts were determined using the Elley Noun Frequency Method (Elley & Croft, 1989) with some cross checking using the Fry Readability Formula (Fry, 1964) for higher level texts. For texts with less than 25 words, in which the Noun Frequency Method is acknowledged to be unreliable (Parkin et. al., 2002), Holdaway's Sight Words and Progression of Word Recognition Skills (Holdaway, 1972) was used.

South Australian Spelling Test (SAST)

The SAST is a standardised test of spelling achievement for students aged 6 to 15 years of age. It is based on a graded word list compiled by Dr. Margaret Peters of Cambridge University and published in *Spelling - Approaches to Teaching and Assessment* (Westwood, 2004). Although originally standardised on children in England, the test has also been normed on large representative samples (10,613) of South Australian children in 1978 and again in 2004 (Westwood, 2004). The test-retest reliability of the SAST is .96 for most year levels. Gender differences were investigated using statistical methods and no significant difference was found across all year levels.

Test of Whole Number Computations

The Test of Whole Number Computations was developed by the Australian Council for Educational Research (ACER, 1969) and is part of the AM series, Mathematics Tests (ACER, 1969). It is a sequenced test of four basic mathematics operations: addition, subtraction, multiplication, and division and was specifically chosen for the present study due to

identification of this area as essential knowledge for all school students (Queensland Department of Education Mathematics Syllabus, 1989). Furthermore, this test contains no reading component that would disadvantage poorer readers. The ACER AM Series Manual (1979) reports a test-retest reliability coefficient of .86 over a 6 to 8 week period (ACER, 1969).

Self-Descriptive Questionnaire-II (SDQ-II) (Marsh, 1990)

This test is a 102-item measure of self-perception developed by Marsh (1990). Norms for the test were based on the responses of 5,494 Australian students and are presented for each of the SDQ-II scales and for the Total Self-Concept score (Marsh, 1990). Marsh reported an internal reliability coefficient for each scale of .83 to .91 (median .87) and an average correlation among the factors of .18.

The Strengths and Difficulties Questionnaire (SDQ) (Goodman, 1997)

The SDQ is a brief behavioural screening questionnaire for 3 to16 year olds (Goodman, 1997). A study by Hawes and Dadds (2004) examined the psychometric properties of the SDQ with a large community sample (N = 1,359) of Australian children aged 4 to 9 years. Moderate to strong internal reliability (0.59 to 0.80) was found across all SDQ subscales. When the subscales were compared with teacher ratings and diagnostic interviews, sound external validity was also found (Hawes & Dadds, 2004).

Conclusion

When designing a research project it is important to remain focussed on the primary aim of the research and thereafter determine which methodological approach will best suit the investigation. As the aims of the present study were exploratory in nature, the use of an

exploratory mixed methods design provided the researcher with opportunities to explore themes that arose during the data collection and thus enrich the qualitative narrative that resulted from the investigations. The use of quantitative data served to support (or refute) findings and improve the validity of the interpretations.

The methodological approaches chosen for the present study were embedded in case studies of five particular young people (with ADHD) in the chosen setting (a Flexible Learning Centre). By using a case study model for the research, a more in-depth analysis was achieved at an individual (within-case) level as well as at a more general (across-case) level. The variety of data collected during the study provided the opportunity to fully explore all aspects under investigation and to provide a rich narrative discussion on the findings from the study.

The following chapter will discuss the specific methodology of the study with relation to the participants, the setting, and the measurement tools employed during the research. It will also outline the processes adopted during administration of the measures and subsequent analysis of the data.

CHAPTER FIVE

General Method

The present study adopted an exploratory, mixed methods design which involved the use of both qualitative and quantitative data to facilitate a rich and comprehensive picture of the participants and the research setting. Both forms of data were collected from five participants and their parents/carers (if possible), and were subjected to within-case and across-case analysis to determine trends and themes that arose during the study. The quantitative data collected were used to support (or refute) analysis of findings and to determine the academic, social and behavioural progress of the young people across two points in time. This chapter will describe the participants, measures, procedure and data analysis.

Participants

To be eligible to participate in the study, participants had to have a medical diagnosis of ADHD and be attending CEP on a full-time basis. Out of a possible pool of 30 young people with ADHD, five young people with ADHD and their parents/carers agreed to participate although for three of these, the parents/carers chose not to, or were unable to, be interviewed. To protect the identity of each participant, pseudonyms were used. A brief description of each of the participants is provided below.

Participant One – Gary

At the beginning of the study Gary, an Anglo-Australian male was 13 years and 8 months old. He was an only child in the care of his biological mother's sister (Janine) who lived alone. He had very limited contact with his biological mother, who lived interstate, and had no contact with his father. Gary had lived with his aunt since he was two years old and

identified Janine as his 'mother'. At age four, Gary was diagnosed with ADHD but had not received any treatment until aged nine when his behaviours at school became severe and he began taking Ritalin. At the time of enrolling in the study, Gary had been at CEP for three months and was not taking any medication for ADHD.

Participant Two – Andy

At the beginning of the study Andy was aged 13 years and 11 months. Andy is of Indigenous heritage and had been attending CEP for seven months at the time he enrolled in the present study. He lived with his aunt Frances and had limited contact with his biological mother who lived in a rural Aboriginal community that had previously been an Aboriginal Mission. Andy identified Frances as his 'mother'. Andy had no contact with his biological father and had no biological siblings but had a large family of 'cousins' with whom he kept in contact. At age nine, Andy had been diagnosed with ADHD and had begun pharmacological treatment. Andy had also been ascertained as having an intellectual impairment together with a moderate hearing impairment. The presence of these additional impairments were taken into account when analysing the findings from Andy's test results Due to the myriad of difficulties Andy experienced, he had previously been attending a Special Education Unit. At the time of the study, Andy was not taking any medication for his ADHD.

Participant Three – Sean

At the commencement of the present study Sean, an Anglo-Australian male, was 15 years old. He had been attending CEP for two years. Sean lived with his mother Sarah and a stepfather who, at the commencement of the study, had only been in Sean's life for two months. Sean was an only child. During the two years of attendance at CEP, Sean had lived with two other male partners of his mother and had no contact with his biological father with

whom there had been a history of domestic violence. Sean had a strong relationship with his maternal grandmother who played an active role in Sean's life at school. At age six, Sean had been diagnosed with ADHD and had received pharmacological treatment for approximately three years. The treatment was ceased by Sarah as she did not believe it was of any benefit to Sean.

Participant Four – Billy

At the time of enrolment in the study Billy, an Anglo-Australian male, was 15 years old. He had been attending CEP for one year. Billy was the youngest of nine children and lived with his father (Bob) and two brothers. His other siblings had grown up and lived away from home, some locally and others in Tasmania from where the family originated. Bob had been a single father for most of Billy's life although Billy did have contact with his mother and spent two months of the year with her in Tasmania over the Christmas school break. Bob had suspected for some time that Billy had ADHD and had sought medical support for Billy. When Billy began at CEP he had been on a waiting list to see a paediatrician through the public health system for two years. With the school's support, Bob took Billy to a private practitioner who diagnosed Billy with ADHD and began treatment with Ritalin (seven months prior to the beginning of the study).

Participant Five – Paul

At the beginning of the study Paul was aged 15 years and 8 months and had been attending CEP for 15 months. Paul's father is Indigenous and his mother Anglo-Australian. At the time of the study, Paul lived with his mother (Jackie) and two younger siblings (aged 12 and 10) and had no contact with his father. He had been in foster care for a number of years previously due to severe incidents of sexual abuse involving a stepfather. Paul had been

returned to Jackie's care two years prior to the beginning of the study. Both Paul and Jackie continued to struggle with the previous trauma and Paul was receiving counselling external to the school setting. At age eight Paul had been diagnosed with ADHD and had been receiving pharmacological treatment since then, except for the period of time that he had been in foster care. In an effort to treat Paul's ADHD and his severe emotional difficulties, Paul was often on medication trials that required constant monitoring and evaluation and that had differing levels of success.

Quantitative Measures

The quantitative measures were gathered across two points in time to allow a pre- and post-test result and facilitate measurement of progress. The two points in time were approximately nine months apart and the following tests were administered to participants:

Prose Reading Observation, Behaviour and Evaluation of Comprehension (PROBE).

The PROBE reading test uses a variety of texts to assess the reading age and comprehension age of young people. The test also allows assessors to observe the reading behaviours of young people as they complete the requirements of the test. Administration involves the child reading to the assessor in a one-to-one situation. A starting point is established using the PROBE determiner (word recognition scale) and the child is asked to read a text (fiction or non-fiction) for the pre-determined level whilst the assessor keeps a running record of the reading behaviours. Competence in decoding is reached when a child scores 96% or higher. Following reading, the child is asked a series of six questions which assess comprehension according to six elements: literal; reorganisation; inference; vocabulary; evaluation; and reaction. It is generally considered that a minimum success rate of 70% would indicate that the child has grasped the main points and details of the text. If 70% is not reached

the child reads a text at a lower reading age until 70% comprehension is achieved. For the purposes of this study, the decoding age and comprehension age were recorded. To achieve consistency in recording, the researcher conducted all the reading tests of participants at both testing points.

South Australian Spelling Test (SAST)

The SAST is a standardised test that may be administered to a group or individually. Administration involves saying the word, placing it in a sentence and then saying the word again, for example, *'friend', she is my best friend, write 'friend'*. The word list contains 70 words of increasing difficulty and the test progresses until 10 consecutive errors are made. For the purpose of this study the test was administered on an individual basis by the researcher to achieve consistency in administration. The raw score is obtained based on the number of correct spellings and this score is then translated into an approximate spelling age.

Test of Whole Number Computations

The test of whole number computations consists of a booklet containing 39 items of increasing difficulty, for example;

2. $\begin{array}{r} 24 \\ +\ 73 \\ \hline \end{array}$

12. $\begin{array}{r} 87 \\ -\ 49 \\ \hline \end{array}$

17. $\begin{array}{r} 103 \\ \times\ \ 5 \\ \hline \end{array}$

31. $(3 \times 8) + (5 \times 7) =$

Students record their workings in the booklet as they progress through the test and are asked to stop after 30 minutes. The layout of the test was modified to conform to presentation recommendations of the Queensland Department of Education Mathematics Syllabus (i.e., horizontal format to a vertical format for algorithms). Raw score data based on the number of correct responses were recorded for this study and progress was indicated if the raw score increased on post-test.

Self-Descriptive Questionnaire-II (SDQ-II)

This SDQ-II is a 102-item measure of self-perception in four non-academic areas (physical abilities, physical appearance, same-sex/opposite-sex relations, and parent relations), three academic areas (reading, mathematics, and general school), as well as emotional stability, honesty-trustworthiness, and a general self-scale, developed by Marsh (1990). These 11 scales are summed to yield a Total Self-Concept score as well as reflecting the adolescent's self-rating in the individual areas. In completing the test, adolescents are asked to respond to simple declarative sentences (i.e., "I am good at reading", "I worry more than I need to") with one of six responses: false; mostly false; more false than true; more true than false; mostly true; or true. The test can be completed individually or in a group but for the purposes of this study, individual administration by the researcher was chosen so that poor reading skills would not interfere with the completion of the test. Children who scored poorly on the Probe reading test had the statements read to them and were asked to choose the response that best reflected their belief about the statement. The raw score data can be converted to percentiles and T scores. The students' raw scores and percentile scores were recorded for the purposes of the present study.

The Strengths and Difficulties Questionnaire (SDQ) (Goodman, 1997)

The SDQ is a brief behavioural screening questionnaire for 3 to16 year olds. It consists of 25-items divided between five scales, some positive and some negative with the choice to be made of, not true, somewhat true, or, certainly true, for example, "I am restless, I cannot stay still for very long" (self questionnaire); "Picked on or bullied by other young people" (parent questionnaire). The scales are: emotional symptoms (5 items); conduct problems (5 items); hyperactivity/inattention (5 items); and peer relationship problems (5 items), which added together generate a total difficulties score (based on 20 items). The final scale is prosocial behaviour with five items. The questionnaire is provided to parents and a self-report version for adolescents (worded slightly different). The initial questionnaire asked questions relating to the last six months with the follow-up version focussing on the last month, to increase the chance of detecting change. All questionnaires were sent home with participants in the study and were completed without assistance from the researcher.

For each of the individual scales in the SDQ, the score can range from 0 to 10 with total difficulties score ranging from 0 to 40. Scores obtained are then marked on bandings to show whether the results are within the normal, borderline, or abnormal range. The impact score is likewise classified as normal, borderline, or abnormal with the scores ranging between 0 and 2. For the present study the identifiers of normal, borderline, or abnormal were used and compared across the two testing points to ascertain whether improvements occurred.

Qualitative Measures

The following qualitative strategies were used to gather data:

Semi-Structured Interviews

Each of the participants and their parents/carers were invited to participate in semi-structured individual interviews that took approximately 40 minutes. For the young people, the

interviews were conducted in the school setting in a room that allowed privacy from other students and distractions. For the parents/carers, the option was offered of conducting the interview offsite at their place of residence. Two parents in the study chose this option and these interviews were conducted after school hours in their homes. All interviews were taped and later transcribed by an independent person who had no other involvement with the study. A series of open-ended questions pertaining to the goals of the study were presented to the interviewees, for example "what is school like for you now that you are at CEP?". Additional probes were used to encourage the participant to elaborate on a statement or to clarify issues, for example "do you come to school on a regular basis? Why? Why not?" (see Appendix 4). The interview also involved some retrospective questions in order to gain an historical perspective in relation to the research questions such as, "tell me about what school was like for you before you cam to CEP". The parent interview explored the same questions presented to the young person and included probes to elicit richer responses (see Appendix 5). The young people involved in the study were not aware of the identity of others involved thus preventing the possibility of sharing information regarding the interview contents. The interviews were conducted within a short time span (across two particular days) which further prevented young people from sharing information.

One of the disadvantages of using interviews in data collection is that the lack of relationship between the interviewer and the interviewee impedes the free-flow conversation that exists when the parties are familiar with each other (Gay, 1996). This disadvantage has been overcome through this study as the researcher was the interviewer and already had a history of relationship with each of the interviewees and an established rapport that was conducive to expanded conversation. Whilst acknowledging that this presented some issues in relation to validity (discussed in Chapter 4), this approach ensured that the participants

engaged in a more open interview due to the already established relationship between the parties involved.

Archival Records and Recollections

Archival records were reviewed from school documents. The recollections focused on the changes that had occurred for the young people during their time in the school setting. With a relatively small student population (currently 90), staff at the school have a knowledge of and relationship with each young person who attends the CEP. Under this circumstance, it was relatively simple for the researcher to draw on recollections during the short time period of one year with the small group of participants. Similarly, families of the young people who attend the school are welcomed to and often play an active role in their son and/or daughter's time at CEP. The parents/carers of each of the participants in the present study had relationships with the researcher and thus provided further insight into the experiences of the young person at home. On enrolment to the flexible learning centre, the school gathers a detailed history of the young person's previous schooling together with the issues or reasons for the young person seeking enrolment. This data were drawn on to present an historical overview of the learning journey of the young people who participated in the study prior to enrolment at the school. Other school documents that were accessed included attendance records and semester reports.

Participant Observations

Observations formed a key role in the data collection during the present study. The observations were gathered by the researcher who adopted the role of 'participant observer' (Cresswell, 2005), which has distinct advantages and disadvantages. With a history of prolonged engagement in the setting, the researcher was able to rely on her relationships with and knowledge of the young people involved in the study and thus was able to observe

authentic situations not influenced by being observed. A distinct disadvantage of adopting the participant observer role is the potential for 'observer bias' and thus lack of validity of the observations. To reduce the likelihood of this bias and increase validity of the observations, many of the observations used were discussed with the participants during the interview phase to ensure validity of the interpretations.

Two aspects were under scrutiny during the observation period, the setting and the participants within the settings. Observations relating to the setting focussed on: approaches to teaching/learning; the physical environment (whole school and classroom level); processes used within the school; aspects of social learning; and, the general culture of the setting. As the researcher has a history of prolonged engagement with the setting, it was unnecessary to design an observation schedule instead the focus areas mentioned were used as categories to gather data both throughout the study and retrospectively.

Observations of the participants in the study were primarily focussed on academic, social and behavioural progress they were (or were not) making. Most observations gathered were unplanned and occurred in authentic experiences over the course of the study, however, following analysis of the data gathered, some focus observations were scheduled to ensure reliability of the data interpretations.

Procedure

Ethical clearance for the study was approved by The University of Queensland Social and Behavioural Sciences Ethical Review Committee (see Appendix 1). Gatekeeper permission was also sought from the Christian Brothers through the Xavier Province Centre administration (see Appendix 2). Permission was granted and subject to Xavier Province Centre Privacy Policy that required all personal information on participants and their parents/carers to be kept

in a secure location for the duration of the study and to be destroyed on completion of the study. All policy requirements were strictly adhered to during the course of the study.

As CEP has a large number of young people with ADHD, namely 30 at the beginning of this study, all were invited to participate. The only criteria used for selection was a medical diagnosis of ADHD. A letter explaining the study and requesting permission for the young people and their parents/carers to participate was sent home to all identified young people (see Appendix 3). This was followed by a personal phone call to address any concerns or issues that prospective participants may have had. Following this process, five young people and their parents/carers agreed to participate.

The five young people completed the *Probe, South Australian Spelling Test, Self-Descriptive Questionnaire, the Strengths and Difficulties Questionnaire, and Test of Whole Number Computations* at the school as a standard procedure. That is, all young people who attend CEP participate in a battery of tests (including the ones used in the present study) on enrolment and at the beginning of each year. The tests are conducted within the classroom setting and are administered by trained school officers and teachers. All scoring and marking of the participants' tests were conducted by the researcher to achieve parity in interpretation. After a period of approximately nine months from initial testing, young people and their parents/carers once again were asked to complete the same battery of tests under the same conditions as the initial testing (i.e., in classroom settings, scored by researcher). In addition the parents/carers were asked to complete the *Strengths and Difficulties Questionnaire* at home. All parents/carers completed the test at home and returned it to the school.

Archival records were reviewed on each young person involved in the study and were drawn from enrolment records/interviews, previous school records (if available), ascertainment data (if applicable), and attendance records for the period that the young person had attended

CEP. Personal recollections were also provided from the time the researcher had spent with the participants in the setting.

Observations were mostly unplanned and were concerned with both the participants and the setting. In relation to the participants, observations focused on academic, social and behavioural progress (or lack of), and specifically observed behaviours such as: socialisation; engagement with staff, peers, school community and program; self-direction and control over learning; specific areas of strengths and weaknesses; and, self-confidence. Observations of the setting included aspects such as the approaches used for teaching/learning, the physical nature and location of the setting, processes used within the setting to deal with specific issues (such as conflict), and the general culture of the setting.

Each young person participated in a semi-structured interview with the researcher (see Appendix 4). The interview occurred at or around the same time as the post-testing and was conducted within the school in a space that afforded the young person privacy. The interview focused on the personal views of the young people retrospectively, at the current moment, and prospectively and compared any changes across time.

Parents/carers were also invited to participate in a semi-structured interview (see Appendix 5) but as anticipated, some chose not to be involved because of a variety of reasons including primary carers who are foster parents having little knowledge of the child and/or parents choosing not to engage in the school community. Of the five participants in the study, two parents agreed to participate in the interview process although all parents/carers willingly completed the SDQ which was sent home. Parents were given the option of venue for the interviews to encourage participation and one parent chose to come to the school setting while the other had the interview in his home outside of school hours. All interviews were taped and later transcribed by an outside party to prevent interviewer bias. The interviews that were completed in the school setting occurred in a withdrawal room that ensured privacy and took

approximately 40 minutes. All content of the interviews was subject to confidentiality and pseudonyms were used for transcription purposes as well as in interview analysis. The interviews occurred following the second testing point so that the researcher had sufficient data on progress (or lack thereof) to discuss with the young people.

Data Analysis

Data analysis in the study followed the six-step model suggested by Cresswell (2005), namely, preparing and organising the data, exploring and coding the data, describing findings and forming themes, representing and reporting findings, interpreting the meaning of the findings, and, validating the accuracy of the findings. As the study was primarily based in 'case-studies' the processes of the six steps and the qualitative data collected from all sources (observations, recollections, interviews, archival records) were filed according to the individual case they represented. Initial exploration of the data involved multiple readings of the interview transcriptions (participants and parents/carers) to obtain a general sense of the data. Although all interviews followed a sequence related to the interview questions (see Appendix 4 and 5), the questions asked were open-ended enough to allow participants to elaborate and thus potentially provide additional information. Coding of the data involved 'segmenting and labelling text to form descriptions and broad themes' (Cresswell, 2005, p.237). Code descriptors used during this phase of data analysis were general and referred to the primary content of the responses such as: setting and context; attendance; peer relationships; knowledge of ADHD; thoughts on teachers; perspectives on school; academic abilities, and; community participation. Additional qualitative data such as observations, recollections and archival records were then analysed and coded in a similar manner.

The third step in the data analysis process involved exploring the codes in the data to identify repeated patterns or themes. Braun and Clarke (2006) believe that themes are not

merely 'discovered' during analysis but are selected by the researcher as being of interest to the study, the researcher plays an 'active' role in the selection and analysis. Although this was partly true as all data collected were driven by the research questions, the researcher aimed during this analysis process to be open to all ideas and perspectives that arose from the data. This data driven approach to analysis is known as inductive data analysis (Patton, 1990) and is an approach that allows the participants' perspectives to emerge. Lincoln and Guba (1985) propose that the inductive data analysis process is more likely to identify multiple realities and thus lead to a richer analytic description of the data.

The next step three steps in the data analysis occurred concurrently and involved: representing and reporting on the findings; interpreting the meaning of the findings, and; validating the accuracy of the findings. Initially this involved individual participants and contributed to a within-case analysis of the young people involved in the study based on the research questions (p. 4). Combining the qualitative and quantitative data at this point provided the researcher with rich data to interpret the findings and validate the accuracy of any interpretations. During the within-case analysis, particular themes emerged that were recorded for further analysis across-cases.

During analysis across-cases it was identified that there were some themes common to all participants and others that were limited to one or two of the participants. Braun and Clarke (2006) explored this issue of prevalence in themes in a study on using 'thematic analysis' in research, and concluded that, "…. the 'keyness' of a theme is not necessarily dependent on quantifiable measure- but rather on whether it capture(d) something important in relation to the overall research questions" (p. 82). Thus, themes that applied to only one or two participants were considered in relation to the research questions and included on the basis that their contribution would facilitate a deeper understanding about the experiences of the young people. These themes then formed the basis of the across-case analysis and all forms of data

were once again explored from the perspective of each individual theme to identify data that would support (or refute) any interpretations made by the researcher. It was also necessary during the across-case analysis to infer possible reasons for any findings (both qualitative and quantitative) and then support these interpretations with data available, if possible. Consequently, the data collected during the study were examined a number of times and from a number of perspectives. What resulted was a rich narrative that had support from numerous sources and had been explored extensively to ensure its accuracy and validity.

In addition to the qualitative data analysis, the quantitative data were collated from the two points in time. This entailed scoring the tests and entering the results into tables so that the results could be compared across the two testing points. Quantitative data gathered from the testing instruments used were all marked and scored by the researcher in order to achieve consistency in interpretation. The data were filed in the individual files of the participants but were collated at a later stage to allow comparison of results across cases. Quantitative data results were used to validate and support the interpretation of qualitative data findings during analysis.

Conclusion

While the primary research strategy in the present study was that of case studies, the multiple methods used (qualitative and quantitative) to collect data aimed to support and add validity to the findings. The following chapter will provide an in-depth within-case analysis in order to provide readers with a thorough understanding of the participants in the study before proceeding to discuss the themes that emerged across-cases. As mentioned previously, this rich narrative approach to the analysis of data aimed to provide future researchers with sufficient information to determine whether the findings, and/or the research methods, are transferable to new situations.

CHAPTER SIX

Results: Case Studies

The following chapter provides an in-depth description of each of the five case studies including analysis of data gathered for each of the participants (interviews, historical records, quantitative tests, observations). In order to respect the aims of the study and to protect the privacy of the individuals involved, participants and their parents/carers were given an assumed name. As previously stated the research questions of the present study were to investigate:

- What academic, social and behavioural differences (if any) are evident over time in young people with ADHD who attend a flexible learning centre?
- To what do the young people and/or their parents/carers attribute any differences?
- What implications do the findings provide for educators and researchers of interventions for young people with ADHD?

The chapter is structured in two parts. Part 1 presents within-case analyses which examine and discuss the outcomes for the individual participants in accordance with the research questions. Part 2 presents an across-case analysis that compares the outcomes across all participants and discusses the findings and emerging themes.

To facilitate ease of reading, each within-case analysis in Part 1 follows a similar format of three sections. The first section will present the qualitative data from the study involving a narrative history in three areas: background (family and medical), schooling (past to present), and peer relationships. Data for this narrative were drawn from multiple sources: enrolment interview and documents; observations and recollections; and project interview. The second section presents and discusses quantitative results related to the academic, social and

behavioural outcomes of the participants over the two time points. The third section concludes the within-case analyses with a brief comment on remaining challenges for each participant.

Part 2 of the chapter presents an across-case analysis of the data gathered during the study of the academic, social and behavioural outcomes of the participants. Comparisons of outcomes are made between the participants and conclusions drawn about the results. Although the main emphasis of the study was an examination of the academic, social, and behavioural outcomes of the participants, other themes arose during the data gathering that are explored and analysed and, together with the main study focus, form the basis of the final analysis of the research finding.

Part 1 - Within Case Analysis

While each young person in the study will be discussed individually, for ease of reading, a timeline of their participation in the study is presented is presented in Table 7.

Table 7

Timeline of Study Participation

Name	Date of Birth	Enrolment Date	School attendance rate during first two months of enrolment at CEP	Entry date into project: Pre-test	Post-test: date of retesting	Project Interview	School attendance at post-test
Gary	11/3/93	Aug 2006	40%	Nov 2006	Sept 2007	Sept 2007	70%
Andy	6/9/92	Jan 2006	100%	Aug 2006	June 2007	Aug 2007	97%
Sean	13/9/91	July 2004	73%	Nov 2006	Aug 2007	Sept 2007	100%
Billy	14/11/91	Oct 2005	20%	Nov 2006	Sept 2007	Sept 2007	76%
Paul	12/4/91	Aug 2006	80%	Nov 2006	Sept 2007	Sept 2007	97%

Participant One - Gary

Background: Family and Medical

Gary was 13 years of age at the time of entry into the project. He had been at CEP for three months. Gary was not an active participant in the enrolment interview and preferred to allow his mother/carer to talk for him. According to the enrolment documents and interview notes, Gary had lived with Janine since the age of two. Janine was the sister of Gary's mother who lived interstate and had very little contact with Gary. Although Gary knew of his father, he also had no contact with him. Gary called Janine 'Mum' and did not refer to his biological mother at all. The only extended family was an Uncle who was often called in by Janine to help manage Gary's demanding and violent behaviours.

At the age of four, Gary was diagnosed with ADHD. No treatment was started then but when Gary started school his difficulties with behaviour increased and thus medical treatment was sought. Janine reported during the enrolment process that Gary had been on Ritalin during Years 4 to 6 of his primary schooling but that he had ceased taking medication in Year 7 when he began refusing to go to school. Janine did not continue his medical support instead seeking counselling through a local youth agency. The youth agency worked with Gary on issues of anger and violence and attempted to reintegrate him into a school setting. They eventually referred Gary to CEP. Both Gary and Janine continued to access support from the youth agency. Janine in particular, was supported in strategies for managing Gary's behaviour and for putting boundaries in place.

Schooling: Past to Present

Prior to enrolment at CEP, Gary had been enrolled at two local high schools and his attendance had been extremely poor (less than 20%). Janine (his carer) reported that Gary was a school refuser and that she had limited strategies for forcing him to attend school. When not

at school, he generally stayed at home and watched television or played console games. Janine was reluctant to take these activities away from Gary as a strategy for making him attend school as she reported that he became quite violent when she tried. She also reported that Gary was very depressed and had threatened suicide and self-harm, although mainly when she refused to supply him with tobacco or money.

During the interview, Gary was very clear on when things started going "*wrong"* for him at school and named this period as Years 7 and 8. He attributed most of his difficulties during this time as related to not being able to use tobacco and getting into fights. He reported that he had missed 129 days in Year 7 and 97 days in Year 8 and that he had been suspended for smoking 32 times in Year 7 and 16 times in Year 8. Gary was asked if he had ever tried to quit or wanted to and he was adamant in his answer that he didn't want to quit smoking.

In terms of his academic progress in previous schools, Gary reported that he had no problem with marks but that he did not like the subjects offered. Due to his poor attendance, he often was placed in subjects he did not choose and did not like. He also mentioned that the teachers were "*strict"* but this again seemed to be in relation to his tobacco use. Gary did speak about a Year 7 teacher who used to allow the children to break every half hour and go to the oval. He thought this was a good idea and it helped him stay focussed on his work when he returned to the classroom.

Following enrolment, Gary participated in a class of no more than 10 young people. Most of the young people in the class had significant difficulties with either their learning or their behaviours or both learning and behaviours. The curriculum in the class focussed on social skills development through real-life activities with academic work focussing on skills development in literacy and numeracy. Young people were encouraged to participate in the decision-making regarding what and how they would learn and were guided towards a level of independence in their work. Many learning activities occurred outside of the school grounds in

social or community settings (e.g., parks, beach, community venues). The researcher was at this time Gary's main teacher.

During the first two months of Gary's enrolment at CEP he had a poor attendance rate of 12 days out of a period of 30 days (40%). He was reluctant to engage in learning and had many strategies for avoiding work, both work that he could not do and work that was relatively easy for him. Socially, he did not fit in well with the class group and found himself in many conflict situations. Gary's response to these situations was to become very upset and want to go home. He was reluctant to work at resolving these issues. One of the biggest issues for Gary at school was his overwhelming need for tobacco. He was often so consumed with the need for a cigarette that he was unable to concentrate on anything else. This problem often led Gary to be absent from class during school time.

Throughout the period of the study issues regarding tobacco continued to be a constant source of anguish both within school and at home where Gary expected Janine to support his habit and became quite violent when his needs were not met. To further exacerbate this problem, Gary became friends with some older students who spent much of their leisure time involved with illicit drug use. Gary was immersed in that world and willingly revealed the activities in which he was involved. He found himself in many situations at school where he had to make contracts regarding his drug use and the effect it was having on himself and others. Although the school is mandated to report drugs found on the premises to the police, in situations where this happens high levels of support are provided for the young person to negotiate their way through the legal pathways that occur. Gary had a number of short suspensions from CEP due to having drugs on his person at school or to being under the influence of drugs but on each occasion he has negotiated his path back to school which seems to indicate a sense of belonging to a school that at other schools, he had not encountered. In

each instance that drugs were found on Gary's person, the police were involved due to the mandatory reporting requirements of the school.

Following a serious incident around drugs that occurred during the study period, Gary agreed to "*do something"* about his drug use as he acknowledged the effect it was having on his life. He sought help through the youth agency that he had been involved with for some time and made a commitment to take more control over his drug use. This created quite a stormy period in Gary's life and he and Janine had significant difficulties at home. Janine often approached the school for support and assistance in mediating between Gary and herself. Following a particularly violent incident between Janine and Gary in which Gary once again threatened suicide, Gary revealed to his teacher (the researcher) that much of his anger toward Janine was in relation to an identity crisis with regard to his biological parents. With the support of the teacher, Gary began attending counselling to work through this issue.

When asked to talk during the project interview about changes in himself over his time at CEP, Gary found it a little difficult to identify the changes. He was clear that his previous tendency to get into fights had improved a lot and that he had learned to *"walk away and ignore"*. He believed that his behaviour had improved significantly but was unable to name specifically in what way. However, in relation to attendance he was confident in the improvement. When asked if his ADHD continued to cause him problems at CEP, Gary replied that it didn't but did not elaborate on this. When asked about his attribution of success/failure, Gary identified that he had previously blamed others for his failures but now accepted responsibility for them himself. Gary expressed confidently that he liked being at CEP as he was "*able to smoke*". However he did go on to mention that he enjoyed having choices in the subjects he learned and in how he wanted to learn. This autonomy in learning was evident throughout the study period as Gary had participated in negotiations about his senior phase of learning and actively made choices with regard to his pathways.

Peer Relationships

On enrolment, Gary and Janine reported previous incidents of bullying at school which had exacerbated Gary's school refusal. Once Gary began to attend CEP, it was observed that he found it difficult to make friendships and he did not appear to have many friends outside of school either. He appeared to have some difficulties maintaining friendships and observations seemed to indicate that his skills for communicating with peers were poor. Gary had little in common with other young people due to his previous lack of school attendance and social interactions.

During the project interview, Gary identified that at previous schools he was unable to form strong friendships due to lack of school attendance and reported that he only "*knew people*". He did not feel part of the school community and preferred to stay at home where he watched television and began his experimentation with illicit drugs. He reported that he had many more friends at CEP and when asked to elaborate on why he thought that was the case, he said that it was because *"he had known them for a long time"*. This again seemed to be in relation to his improved attendance rather than the length of time Gary had been at CEP. Gary spoke of better relationships with teachers who *"talked to you and not just about your work"*. He spoke strongly of feeling like part of the school community and expressed that he believed it was easier at CEP because of the smaller numbers of students.

During the course of the present study, observations indicated that Gary had greatly improved relationships with others and appeared to have connected with a number of young people. Although he did not have a large friendship group, Gary had developed the skills to socially communicate with his peers and to extend his friendships to environments outside of the school setting. At one stage Gary joined the CEP football group to support the players by taking video and pictures during games and assisting with organisation. Gary's willingness to give to the school community appears to have increased his status amongst his peers.

Academic Outcomes

Gary participated in a series of tests at two points in time, approximately a year apart. The results of the academic testing are shown in Table 8.

Table 8

Academic Test Results for Participant One

TEST	PRE-TEST	POST-TEST
Probe Reading Test - Decoding	15 years 6 months	15 years 6 months
Probe Reading Test - Comprehension	13 years 6 months	15 years
South Australian Spelling Test	>15 years 6 months	> 15 years 6 months
Test of Whole Number Computations	16/39	20/39

Results of the pre-test indicated that academically, despite his absence from formal schooling, Gary had strong literacy skills. His Maths was significantly weaker than his literacy and showed diagnostically that Gary had very little conceptual understanding of whole number computation. The results at post-test indicated that Gary had managed to maintain his previously strong literacy skills whilst increasing his comprehension scores. His Maths had improved slightly despite his reluctance to engage in mathematics classes.

Social Outcomes

In relation to his self-concept at pre-test, as measured by the SDQ-II, Gary did not perceive his literacy strength as evidenced by his low score in verbal perception (see Table 9). In Maths, Gary was more accurate in his appraisal of his skills perceiving himself as weak in this area. In other areas as recorded on the SDQ-II, Gary had low self-concept in areas of general self, parent relationships, honesty/trustworthiness, and same-sex relations, as indicated by the individual areas scoring below the 20th percentile meaning that Gary's perception rate

was shared by (fewer than) 20 out of every 100 young people. He reported average perception of his emotional stability (41 percentile – equivalent to 41 out of every 100 young people).

Table 9

SDQ-II Results for Participant One

SUB-SCALES	PRE-TEST		POST-TEST	
	RAW SCORE	PERCENTILE	RAW SCORE	PERCENTILE
Math	31	36	32	39
Physical Appearance	25	27	24	25
General Self	38	14	38	14
Honesty/Trustworthiness	35	19	37	23
Physical Ability	30	23	29	21
Verbal	34	28	35	30
Emotional Stability	38	41	37	37
Parental Relationships	31	17	31	17
General School	36	22	36	22
Same-sex Relations	30	3	31	3
Opposite-sex Relations	32	37	33	41
Overall Score	360	13	363	13

Gary's perception of his verbal skills had increased slightly in the post test as had his perception of maths skills. In other areas of self-concept as recorded on the SDQ-II, Gary continued to have low esteem in areas of general self, parental relationships, emotional stability, and same-sex relations. In the area of same-sex relations, Gary scored particularly low (3rd percentile) and did not improve across the two study points. Observations of Gary's

relationships in the school setting would support this finding and suggest that Gary continues to have issues with social interactions. Overall, Gary's self-concept had not increased much over the year which is perhaps understandable given the conflicts and challenges Gary had to face in relation to his drug use and future path.

Behavioural Outcomes

The SDQ was completed by both Gary and Janine at two points in time. The results are displayed in Table 10.

Table 10

SDQ Results for Participant One

	GARY Self-rated				JANINE			
SUB-SCALES	PRE-TEST		POST-TEST		PRE-TEST		POST-TEST	
	SCORE	CATEGORY	SCORE	CATEGORY	SCORE	CATEGORY	SCORE	CATEGORY
Total difficulties	15	N	12	N	26	A	22	A
Emotional symptoms	6	B	0	N	6	A	5	A
Conduct problems	4	B	5	A	6	A	5	A
Hyperactivity	5	N	3	N	9	A	8	A
Peer problems	0	N	4	B	5	A	4	A
Prosocial behaviours	5	B	8	N	5	B	5	B
Impact supplement	3	A	4	A	4	A	6	A

N= Normal, B= Borderline, A= Abnormal

With reference to his behaviours as measured in the SDQ, at pre-test Gary perceived himself within the normal range for hyperactivity and peer problems but borderline for

emotional symptoms, conduct problems, and prosocial behaviours. He did, however, acknowledge that his behaviours were having an impact on his family and this score was within the abnormal range. Janine, on the other hand, perceived Gary as falling within the abnormal range in all areas with the exception of his prosocial behaviours in which she saw him as borderline.

At post-test there was once again a vast difference in Gary and Janine's perception of his behaviours. Interestingly, Gary's score on conduct problems had increased since the previous test and was perhaps indicative of the situations in which he had found himself over the last year. Janine, on the other hand again perceived Gary as falling within the abnormal range in all areas except his prosocial behaviours in which she saw him as borderline.

Remaining Challenges

During the project interview, Gary was asked about any remaining challenges that he perceived for himself. He was quick to identify that the biggest hurdle he had was in relation to his drug use. He was quite firm that he wanted to stop but that the circumstances surrounding his drug use made it difficult. Gary named peer pressure as the biggest factor in his drug use and his inability to *"say no"*. He was unsure if the friends he had would remain friends if he said no. Gary also identified that he did not know what he would do with his time if he gave up and how he could *"have fun without it"*. This issue continued to be at the forefront of Gary's experience at CEP but his openness and honesty around the issue was assisting him to work through the problem and would hopefully lead to a positive outcome.

Participant Two - Andy

Background: Family and Medical

Andy was 14 years of age at the time of entry into the project and had been at CEP for eight months. Andy lived with his aunt Frances and his biological mother lived in a rural town some four hours drive away. Although, only Andy and Frances resided in the house, many members of the extended family were present at various times. Andy had very little contact with his biological mother and viewed Frances as his mother. He also referred to Frances as his mother thus any subsequent reference to 'mother' in this section is to be taken as meaning Frances. Due to his previous difficulties in school, both academically and behaviourally, Andy's mother decided to bring him to CEP instead of the local state high school. She had heard through her community that CEP had an Indigenous Unit where young people could be immersed in their culture and develop a strong sense of identity.

Andy was diagnosed with ADHD in Year 4 when he was nine years old. At this time he was prescribed Ritalin but ceased taking the drug following his move to live with Frances. Andy was not receiving any treatment for his ADHD as Frances was sceptical about the diagnosis of ADHD. He has had no medical follow-ups since his initial diagnosis.

Schooling: Past to Present

Enrolment documents indicated that prior to coming to CEP Andy had been attending a special education unit in a local primary school due to having previously been verified as having an Intellectual Impairment as well as a moderate Hearing Impairment. Andy was having a lot of difficulties with fighting and being bullied and his violent outbursts were causing problems at home. Whilst Andy had significant learning difficulties, these were not the primary concern for Frances who indicated at the enrolment interview that she wanted the child to be happy and calm.

In terms of his academic work, Andy did not perceive any difficulties at his old school but reported that he often found himself being sent "…..*out of the classroom for doing nothing".* When asked how he got along with his teachers, Andy believed that they were "… *not good teachers*" as they often punished him for "....*nothing*". He was unable to name the causes for his removal from class and spent a considerable amount of time in trouble without understanding the reasons behind it.

On entry to CEP, Andy was placed and participated in the Indigenous Unit class. Young people in this class were taught as a large group with varying assessment and expectations according to year level (and abilities). All literacy activities were embedded in Indigenous topics and a large proportion of the day was spent in learning about Indigenous culture and history. The young people were encouraged to become active participants in the local Indigenous community and many community members were active within the school. The classroom had 30 to 35 young people and four staff members (one teacher and three education support workers). They also had a transition officer who works with young people entering work experience.

When Andy started at CEP he happily fitted in and quickly showed open pride for his culture and his community. He participated fully in all the school offerings and was often observed negotiating with other teachers to join their subjects in the afternoon. Being one of the youngest students in the unit, Andy was looked after by older students who often prevented him from engaging in conflict. Despite this support, Andy had a number of incidents with other young people who had "*annoyed him*". When others annoyed him, Andy would throw things around and make a lot of noise but never physically attack the other person. Observations of these incidents were that it would take quite some time to calm him down and sometimes he had to be sent home to achieve this.

Towards the end of the study timeframe, Frances decided that she would like to move Andy to a smaller classroom setting to try to prevent the ongoing conflict situations. She enrolled Andy at a local high school special education unit and Andy was in a period of transition whereby he spent two days a week at CEP and three days a week at the other school. It was hoped by the end of the year that Andy would be ready to move on to the other school. He appeared happy with the arrangement and liked the smaller group in the special education unit.

Peer Relationships

During the project interview, Andy explained that the biggest problems he faced at his previous schools related to being bullied and getting into fights. He acknowledged that many of the fights were of a 'racist' nature and he had limited strategies for dealing with the conflict situations in which he found himself.

Over the two years at CEP, Andy became a strong young man who participated confidently in all group activities and meetings. Although liked by other students, Andy did not appear to have any significant friendships amongst his peers and spent most of his time with adults. He had poor social competence when mixing with his peers and casual conversations with Andy indicated that he was comfortable in what he perceived as the 'world of rules' to which adults belong. Andy still became involved in conflicts with other young people, most often those students in his class. Observations of the incidents and casual conversations with Andy indicate that he perceived himself as a victim of bullying, which was not always the case.

When asked during the project interview about his time at CEP Andy became quite verbal in his responses. He stated that the choice to attend CEP had been made by his mother and was entirely due to the Indigenous staff from the local community that worked at CEP. He and his mother thought that he would have less trouble with bullying and racism in the

Indigenous Unit. Since coming to CEP Andy believed he had a lot more friends and that they would, "…. *all stick up for me*". He felt a real part of the community and appeared to have gained a strong sense of Indigenous identity. Andy was able to identify these changes in himself and commented that he had changed, "*seriously*" during his time at CEP. He had learned to solve conflict better and rarely got into fights as he had in the past. Although Andy had been in some conflict situations during his time at CEP, he appeared more capable of acknowledging his part in the conflicts and his need to work on his temper. Andy also believed that he had received a '*good education this year*' as he had not been thrown out of class at all. One thing that Andy did name as a negative aspect of his time at CEP was the class size. He did not like being part of the large group in the Indigenous Unit and this had been a major influence on his and Frances' decision to move Andy to another school in the following year. Andy was looking forward to belonging to a smaller class at his new high school where there were only 10 young people in the Special Education Unit (SEU). Andy believed that moving to the new school would be good for him and expressed that "*If I go to L…. they could help me get a job and stuff like that*". He had been with his mother to the school to explore his options and was looking forward to going into the SEU there. Andy was also quite excited about the choices of programs he was going to have at his new school.

Academic Outcomes

Andy participated in a series of tests at two points in time. The results of the academic testing are shown in Table 11.

Table 11

Academic Test Results for Participant Two

TEST	PRE-TEST	POST-TEST
Probe Reading Test - Decoding	10 years 6 months	10 years 6 months
Probe Reading Test - Comprehension	8 years	9 years
South Australian Spelling Test	6 years 8 months	7 years 7 months
Test of Whole Number Computations	4/39	2/39

Results at pre-test indicated that academically Andy had significant learning difficulties. He scored at least three years behind his age in all categories of literacy with his spelling falling seven years behind his age. Analyses of his Maths score indicated that Andy had very few skills in numeration and thus was unable to complete whole number computation.

Analysis of post-test results indicated that Andy has made little progress in his literacy skills except for his reading comprehension and spelling in which he had managed to make some gains. This is perhaps due to the one-on-one support Andy was receiving in the classroom. In Maths however, Andy had regressed and the reasons for this are unknown. One would have expected that given the level of support Andy was receiving in school, gains would have occurred in all areas. Not surprisingly though, it was in maths class that Andy experienced the most conflict problems which could explain the lack of academic progress in this area.

Social Outcomes

At the time of the pre-test, Andy's self-concept in relation to his academic skill, as measured by the SDQ-II, did not correlate with his performance and he saw himself as reasonably good at Maths. His perception of himself high in some areas, particularly in relation

to his physical abilities. He did however perceive his relationships with females as problematic. The results of the pre and post-test for the SDQ-II are shown in Table 12.

Table 12

SDQ-II Results for Participant Two

SUB-SCALES	PRE-TEST		POST-TEST	
	RAW SCORE	PERCENTILE	RAW SCORE	PERCENTILE
Math	42	65	14	5
Physical Appearance	33	54	43	86
General Self	55	71	43	25
Honesty/Trustworthiness	38	35	22	14
Physical Ability	48	96	28	18
Verbal	32	22	30	18
Emotional Stability	35	30	27	11
Parental Relationships	35	27	31	17
General School	50	72	30	11
Same-sex Relations	48	48	46	41
Opposite-sex Relations	28	23	30	29
Overall Score	444	52	344	9

At post-test, many areas of Andy's self-concept had decreased; that is, declines were evident in general self, maths, honesty/trustworthiness, physical ability, emotional stability, parental relationships, general school, and same-sex relations. The declines were not in keeping with Andy's presentation to others in which he appeared to be highly confident and self-assured. His esteem on a more personal level, physical appearance, had increased considerably. Perhaps the decreases were consistent with Andy's academic and social experiences over the

period between the two testing points. In relation to his academic perceptions (math, verbal) the post-test more accurately reflected Andy's skills in these areas than the pre-test. Observations of Andy by the researcher seem to indicate that he also had difficulties being in the large class and lacked the social skills to maintain his place in this large group. Unfortunately, Frances did not want him to move from the Indigenous Unit to another class in the school and thus they began the transition to the Special Education Unit in a nearby state high school.

Behavioural Outcomes

Both Andy and Frances completed the SDQ in August 2006 and June 2007. The results of the two tests are displayed in Table 13.

Table 13

SDQ Results for Participant Two

	ANDY Self-rated				FRANCES			
SUB-SCALES	PRE-TEST		POST-TEST		PRE-TEST		POST-TEST	
	SCORE	CATEGORY	SCORE	CATEGORY	SCORE	CATEGORY	SCORE	CATEGORY
Total difficulties	21	A	19	A	25	A	24	A
Emotional symptoms	4	N	4	N	4	B	4	B
Conduct problems	3	N	6	A	3	B	3	B
Hyperactivity	9	A	6	B	9	A	10	A
Peer problems	5	B	3	N	9	A	7	A
Prosocial behaviours	6	N	10	N	5	B	6	N
Impact supplement	6	A	1	B	6	A	2	A

N= Normal, B= Borderline, A= Abnormal

At pre-test using the SDQ, Andy perceived himself within the abnormal range for hyperactivity, borderline for peer problems and normal for the other areas (emotional symptoms, conduct problems, prosocial behaviours). He did acknowledge that his behaviours were having an impact on his family and he scored his total difficulties in the abnormal range. Frances supported Andy's perceptions and reported that he was within the abnormal range for hyperactivity and peer problems and borderline for the others. She too believed that his behaviours had an abnormal effect on the family.

At post-test, there were some obvious discrepancies in relation to how Andy perceived himself and what was portrayed and observed by others. Andy reported his peer problems as being within the normal range, whilst Frances reported them as abnormal which correlates more accurately with observations of Andy's relationships within the school and the incidents of conflict in which he had been involved. Andy also reported an increase in conduct problems which seems to indicate that he attributed his social difficulties to his own behaviours. Frances noted little change in Andy behaviourally over the two points in time except to acknowledge that his prosocial behaviours had increased since the initial testing.

Remaining Challenges

During the project interview, Andy was asked about his plans for the future and he expressed a desire to go to university and study mechanics and/or fencing. On further probing it became clear to the researcher that Andy was uninformed about life outside of school and was in need of more support in this area. Andy did acknowledge though that he had learning difficulties and attributed these difficulties to the presence of ADHD, although, he had limited understanding of the nature of ADHD. In relation to further challenges for Andy, he acknowledged during the interview that he still had work to do on his anger management and attributed these difficulties with anger to his ADHD.

Participant Three - Sean

Background: Family and Medical

Sean was 15 years of age at the time of entry into the project and had been attending CEP for two years. He lived with his mother and current stepfather and had no contact with his biological father at this time. Details noted during the enrolment process indicated that there had been a history of violence in the family from previous relationships in which Sarah, his mother, had been involved. Sean had a good relationship with his maternal grandmother who spent a considerable amount of time with him. Sean presented as a young man who was extremely anxious and disturbed. He was fearful of anyone being in his physical space and was rude and abusive to adults in particular, but also to his peers.

Sean had been diagnosed with ADHD at the age of six. He spent a few years in primary school on medication but Sarah ceased treatment when it appeared Sean was getting worse instead of improving. Subsequent diagnosis at aged ten suggested Sean may have Oppositional Defiant Disorder (ODD). On enrolment to CEP in 2004, Sean was not receiving any medical treatment for ADD or ODD and was not on medication.

Schooling: Past and Present

Prior to attending CEP, Sean had been enrolled at a school outside of the district and had recently moved to Logan City, the area south of Brisbane city where CEP is situated. According to the enrolment interview notes, Sarah had tried to enrol him at local high schools, a state high school and a private high school, and had been rejected due to reports from his previous school regarding his behaviour. Sean had a history of fighting and both he and his mother claimed this was due to bullying from others. He had been suspended a number of times due to fighting and being rude to teachers. Sean expressed clearly on enrolment that he "*hated school"*.

At the time of becoming a participant in the present study, Sean was placed in a class of no more than 10 young people all of whom were working towards transition to the senior phase of learning. Recollections and observations of Sean over the two years previous to the commencement of the present study showed that Sean had worked significantly on his social interactions and had advanced enormously in terms of his ability to relate to his peers. He still displayed an animosity towards adults, and particularly those that he perceived to be in power (teachers), but was much more restrained in his abuse and rudeness. Periodically, these behaviours would still be observed, most often when Sean was expected to complete some work that he perceived as too difficult (especially Maths).

During the project interview, Sean was asked about his previous schools and admitted to being in "*quite a bit of trouble*" especially with teachers. He acknowledged that he was rude to teachers and attributed this to his frustration at "*not getting the help I wanted or the help I needed*". However, Sean was able to identify that although he still found some of the work hard, at CEP he was, "....*able to get it (help) as the teachers have the time to sit down and talk you through it*". He also identified that he was very happy at CEP and rarely got "*into trouble*". Sean identified that at CEP he had been "*allowed to do the thing I love to do best*" and had made excellent progress in his music with his attainment of a Certificate II in Music Production. He believed that this had attributed to his happiness at school and also to his confidence and "*change in attitude*". When asked to expand on his perceived attitude change, Sean identified that he was no longer frustrated and felt that he was more able to sort out problems when they arose.

Sean was asked during the project interview about whether his ADHD had an impact on his behaviours. Sean appeared to have a considerable understanding of the nature of ADHD and believed that he no longer suffered any of the symptoms. Whilst acknowledging that his ADHD caused him many difficulties in primary school, Sean believed that his difficulties were

more in relation to his frustration at not being able to do the work and/or not being helped in class. He did not believe he had any difficulties associated with ADHD at the time of the study.

Over the period of time Sean had been attending CEP, according to attendance records, he was observed as having a large increase in his self-confidence. This was particularly evident in his participation in the school music program, in which he showed great enthusiasm. He worked hard in music and has subsequently completed a formal qualification. He had good relationships with his peers and was rarely in conflict situations with them.

Peer Relationships

On enrolment Sarah and Sean spoke about experiences of bullying at previous schools. Sean expressed his unhappiness with school and readily acknowledged that he had never felt like part of a school community. He did not appear to have any significant peer friendships outside of school either but spent a lot of time with his mother, grandmother and extended family members. Recollections of Sean's social interactions prior to the study period indicated that Sean had difficulties with forming friendships and was often isolated from group situations. Sean did not appear to have the skills to maintain peer relationships, especially with regard to sharing with others. His long history of being an only child and his lack of interaction with other young people had impacted on Sean's ability to form friendships.

Over the course of his time at CEP, both before and during the present study, Sean began to tentatively form relationships with other young people. Once Sean began to focus on his music studies, he formed strong friendships with young people who shared his love of music. Sean and friends were often observed practising their music during breaks at school and preparing for presentations at school events. When asked during the project interview about his peer relationships at CEP, Sean acknowledged that he had very little trouble with bullying anymore and had quite good friends now, friends that had the same interests as him (music).

Academic Outcomes

Sean participated in a series of test at two points in time. The results of the academic testing are shown in Table 14.

Table 14

Academic Testing Results for Participant Three

TEST	PRE-TEST	POST-TEST
Probe Reading Test - Decoding	15 years	15 years 6 months
Probe Reading Test - Comprehension	13 years	13 years 6 months
South Australian Spelling Test	10 years	11 years 2 months
Test of Whole Number Computations	9/39	17/39

Results at pre-test indicated that academically Sean had good literacy skills but was a little weak in comprehension and spelling. His Maths skills were very poor and he had only a rudimentary understanding of whole number computation. This was evident in observations of Sean's reluctance to engage in any work that involved Maths. The results post-test indicated that Sean had made slight increases in his literacy scores as well as an increase in his Maths scores despite his reluctance to engage in Maths activities.

Social Outcomes

Pre-test results of Sean's self-concept as measured by the SDQ-II and presented in Table 15, shows that Sean was cognizant of his academic weaknesses and perceived himself as weak in Maths but strong verbally. His perception in other areas measured on the SDQ-II was strong, as indicated by scores over the 20th percentile, with the exception of physical ability and same-sex relationships where Sean scored in the 13th and 2nd percentile.

Table 15

SDQ-II Testing Results for Participant Three

SUB-SCALES	PRE-TEST		POST-TEST	
	RAW SCORE	PERCENTILE	RAW SCORE	PERCENTILE
Math	19	11	15	7
Physical Appearance	34	58	35	61
General Self	55	71	44	28
Honesty/Trustworthiness	52	77	51	73
Physical Ability	25	13	26	15
Verbal	45	63	33	25
Emotional Stability	44	63	46	71
Parental Relationships	41	49	39	40
General School	41	38	30	11
Same-sex Relations	29	2	44	29
Opposite-sex Relations	41	74	35	49
Overall Score	426	41	398	26

At post-test, Sean's perception of his skills in the academic areas had decreased over time, perhaps as a consequence of his participation in the senior phase of learning and the increased rigour of the work. In other areas, Sean appeared to remain stable in his perceptions of himself with the exception of his relationships with others where he had increased in relation to same-sex relationships and decreased in relation to opposite-sex relationships, and his general self where he had declined considerably. Sean's perception of general school had also declined considerably which adds support to the idea that Sean may want to move on from the school setting.

Behavioural Outcomes

Sean and Sarah completed the SDQ at two points in time. Results of the two tests are presented in Table 16.

Table 16

SDQ Results for Participant Three

SUB-SCALES	SEAN Self-rated				SARAH			
	PRE-TEST		POST-TEST		PRE-TEST		POST-TEST	
	SCORE	CATEGORY	SCORE	CATEGORY	SCORE	CATEGORY	SCORE	CATEGORY
Total difficulties	12	N	11	N	29	A	22	A
Emotional symptoms	2	N	2	N	10	A	8	A
Conduct problems	3	N	2	N	5	A	2	N
Hyperactivity	4	N	4	N	7	A	7	A
Peer problems	3	N	3	N	7	A	5	A
Prosocial behaviours	7	N	8	N	8	N	7	N
Impact supplement	2	A	0	N	6	A	2	A

N= Normal, B= Borderline, A= Abnormal

At pre-test, Sean perceived himself as within the normal range in all areas measured by the SDQ yet surprisingly acknowledged that his behaviours had an abnormal impact on the family. Sarah, however, perceived Sean to be within the abnormal range for all areas except for the prosocial area in which she saw him as normal. Sarah also reported that Sean's behaviours had a large impact on the family.

At post-test, there was once again a vast difference in Sean's perceptions of his behaviours and Sarah's perceptions. Sean perceived himself as falling within the normal range

in all areas of the SDQ whereas Sarah believed Sean fell in the abnormal range in emotional, hyperactivity, peer problems and impact of his behaviours on the family. Causes for this discrepancy were not readily available and difficult to posit due to Sean's reluctance to engage with teachers at school.

Remaining Challenges

Sean believed he had a good future in the music industry and was committed to further study to make this happen. As well as his school studies of music, Sean played in local nightclubs in his leisure time. One of the disadvantages of Sean's hyperfocus on music was his reluctance to spend any time on other subjects and, thus, he was often challenged with regard to achieving a Queensland Certificate of Education (QCE) on his exit from school in 2009. His conflict with adults about this issue was increasing and Sean was becoming very non-compliant towards his academic studies. He often talked about leaving school to pursue his goal of a career in music. Sean was able to identify this issue as a challenge during the project interview. He was cognizant of his reluctance to engage in academic studies yet realised that he needed to overcome this challenge to achieve the outcomes he required. Sean was unsure of how he could successfully overcome this challenge.

Participant Four - Billy

Background: Family and Medical

Billy was 15 years old at the time of entry into the project and had been attending CEP for one year. According to information taken from the enrolment documents, Billy lived at home with his father Bob and two of his elder brothers. Bob was a single father of nine children, Billy being the youngest. Billy's mother and a large extended family including his other siblings, lived interstate and Billy visited them once a year over the Christmas holidays.

It was clear from early observations and contact with his father that Bob and Billy had a good relationship and Bob worked hard at managing Billy's behaviours. Bob had not been aware that Billy had such high absenteeism from school. On some occasions when Bob had difficulties getting Billy to attend school, he would take him to work.

Although Billy did not attend very often during his early days at CEP on the days that he did attend it was clear that he had great difficulties with concentration. The researcher, who was Billy's teacher, recollected Billy being unable to stay seated for any more than five minutes at a time. He was difficult to get on task and rarely managed to complete a task. He was constantly on the move and had to be brought back to the classroom regularly. Billy spoke often, most usually about things unrelated to the task at hand. He was highly distractible and a severe distraction to others in the class.

By March 2006, it was evident that Billy required some medical intervention for what appeared to be ADHD. In discussions around these issues, Bob related that teachers in the past had suggested this and he was currently on a public hospital waiting list to see a paediatrician for diagnosis. However he had been on the waiting list for two years and upon making some phone calls on Bob's behalf, it appeared that Billy would not see a paediatrician for another 18 months. The school supported Bob to take Billy to a private paediatrician who diagnosed Billy with ADHD/predominantly hyperactive and began Billy on Ritalin.

Schooling: Past and Present

Prior to enrolment at CEP Billy had been enrolled at two local high schools but his attendance had been extremely poor. Billy found it very hard to sit through the enrolment interview and eventually left his Dad to complete the paperwork. Given that Billy had not really attended any school for a sustained period of time over the two years prior to the enrolment interview, he began at CEP on a half-day program. The purpose of this was to

reintegrate Billy into a school setting and to establish a pattern of behaviour that involved getting up each day and going to school.

During the project interview, Billy was asked about his time at school prior to coming to CEP in comparison to his time at school at the present time. Billy was succinct in his reply with regard to previous schools and expressed that they were "*shit*" but then went on to elaborate that *"....you didn't get second chances or nothing, you just get kicked out straight away*". He was verbose during this part of the interview and when asked the reasons for his being 'kicked out', he replied "*things like swearing, yelling, running…. all stupid stuff like what normal people do. You act like a normal person, you get kicked out (ok) you gotta act like someone else*". He added that "*they didn't even talk to you about it, they just kicked you out*". Billy also identified that he had problems with his schoolwork and did not get help when he needed it.

Billy acknowledged that at his previous schools he had not attended often, suggesting once or twice a week as an average attendance rate. Billy said he did not want to go to school as he was *"...getting nowhere, just failing*". He claimed he was unhappy at school and did not feel like part of the school community instead feeling like he was always treated differently. When asked to expand on this idea, Billy said, "….. *you get treated different than everyone else, like me and say two other people went and did something, I'd always get kicked out but they'd just get a warning*". He was unable to identify any reasons for this.

Following enrolment in CEP, Billy participated in a class of no more than 10 young people. Most of the young people in the class had significant difficulties with either their learning or their behaviours or their learning and behaviours. The curriculum in the class focussed on social skills development through real-life activities with academic work focussing on skill development. Young people were encouraged to participate in the decision making regarding what and how they would learn and were guided towards a level of independence in

their work. Many learning activities occurred outside of the school ground in social or community settings.

Despite the high level of support that Billy received in this classroom, observations indicated that his poor concentration and hyperactive behaviours had a negative effect on his progress and engagement. Despite this, the author recollects how quickly Billy was accepted socially by others in the class and throughout the school. He was found by others to be funny and entertaining. Following diagnosis of ADHD and subsequent treatment with Ritalin in March 2006, the changes in Billy were remarkable. His attention span increased dramatically until by the end of September 2006, Billy was able to focus on a task for up to 30 minutes. The benefits of this increased attention were observed to flow into Billy's academic progress and he 'began to learn'. Another consequence of the medication was that Billy's attendance increased substantially. He began to attend school regularly and became a firm member of the school community. Some of the avoidance habits that Billy had developed over the years continued to be somewhat problematic, but Billy was able to engage in negotiations regarding his behaviours and began showing evidence of taking responsibility for his actions. He made remarkable progress during 2006 and at the end of the year initiated negotiations regarding moving forward to the transition class.

When asked during the project interview to talk about his time at CEP, Billy was very clear about what was good for him here. He said "*you get treated like a human, like you get chances here (yep) …. you can swear (yep) … and do things like…. you can do heaps of things here (yep)… like I haven't failed now*". He recognised that he still had some learning problems but identified that "*you get more help and the teachers actually do listen to you here*". Billy said that his attendance was much better "*cause you get treated better here, you get treated like a person here, you don't get treated like you're an animal*".

Billy's father Bob participated in the project interview and had an interview in his home due to his working hours. He did not go into a lot of detail during the interview preferring to keep things simple, "*why make a problem bigger*". Perhaps this approach to issues with Billy is why both report a good relationship with each other. When asked about Billy's time at previous schools Bob was quick to say, "*Well he didn't go, did he?"*. He went on to acknowledge though that he thought Billy was attending as he would set out for school each day. Bob did not receive this information until Billy had missed 79 days in a row. It appeared that Billy would set out each day with the intention of going to school but would meet up with friends and go off to various skate bowls around the area. Bob was not aware of any learning problems that Billy may have experienced due to poor communication between the schools and himself. As Bob says, "*well he wasn't learning that's for sure*".

When asked about Billy's time at CEP, Bob spoke freely of the progress Billy had made. He believed that Billy had made some learning progress but more importantly his attendance was much better. Bob left for work at 4 a.m. and Billy went with him and slept in the car until it was time to go to school (the school is nearby Bob's work). Although Bob works long hours, he said that he felt much more comfortable approaching the school than he had in the past. He was also very happy that staff often rang him to report on Billy's progress or absence if necessary. He also liked being alerted when Billy's behaviours were a problem at school and often discussed the issues with Billy at home.

However, throughout 2007 it was observed that Billy's concentration was waning. Through discussions following the identification of a number of behavioural issues, Billy admitted that he was not taking his medication on a regular basis. He expressed that he was feeling the effects of the stigma attached to being on his medication and was trying to prove to his peers that he did not need it. Billy reported that his peers and his siblings often made comments to him regarding his *"chill pill"* and Billy was becoming reluctant to accept his

diagnosis or his treatment. The result of this decision to cease taking medication on Billy's behalf was a turbulent year in which he lost a lot of the gains he had made in 2006. Billy was often observed being challenged about his behaviours and when the challenges became too frequent for him, he would resort to the medication and would stabilise again for a short period.

Peer Relationships

Billy had no significant difficulties forming relationships with his peers and appeared to have a large friendship group within and outside of school. According to Bob, Billy's main peer group prior to coming to CEP were other young people who truanted from school which contributed to Billy's lack of school attendance. As Billy is the youngest in the family, he often socialised with young people older than himself and was thus able to interact socially with older peers. Bob often took Billy with him to work so Billy had experience in interacting with adults and showed confidence in this area also.

Observations of Billy during his time at CEP indicated that he is a well liked, sociable young man who makes and maintains friendships easily. Billy avoids conflict situations and often takes a peacemaker role when he observes conflict amongst his peers. His experiences within his family and outside of school have enabled Billy to develop good social skills that he uses positively in his peer relationships.

Academic Outcomes

In November 2006, Billy participated in the pre-testing used for the study. At this point in time Billy had been receiving medical treatment for his ADHD for a period of ten months. Prior to receiving this treatment, attempts to assess Billy's cognitive abilities had been

unsuccessful due to his inability to focus. Post-testing occurred in September 2007. The results of the academic testing are shown in Table 17.

Table 17

Academic Testing Results for Participant Four

TEST	PRE-TEST	POST-TEST
Probe Reading Test - Decoding	7 years	7 years 6 months
Probe Reading Test - Comprehension	6 years 5 months	7 years
South Australian Spelling Test	6 years 11 months	7 years 6 months
Test of Whole Number Computations	23/39	32/39

Results at pre-test indicated that Billy had severe gaps in his learning and was experiencing learning difficulties. He had not been previously identified with a specific disability but this could quite possibly have been due to his sporadic school attendance. Following the pre-test, Billy moved to a transition class at CEP which focussed on preparing young people for the senior phase of learning and/or work experience. At the post-testing point Billy had made small gains in his literacy scores but significant gains in Maths. Not only was Billy strong in Maths, he liked the subject which helped him to make gains. The limited gains Billy had made in literacy could be attributed to his difficulties with medication that were revealed during the interview.

Social Outcomes

At the time of the pre-test it was evident that Billy's perception of himself academically, as measured by the SDQ-II, was commensurable with his academic results. Billy also identified an extremely low score in relation to his 'general self' (0 percentile) but

appeared to be strongly confident in relation to his emotional stability and peer relationships. Full results of the pre- and post-tests for the SDQ-II are in Table 18.

Table 18

SDQ-II Testing Results for Participant Four

SUB-SCALES	PRE-TEST		POST-TEST	
	RAW SCORE	PERCENTILE	RAW SCORE	PERCENTILE
Math	34	39	21	17
Physical Appearance	23	14	44	88
General Self	19	0	49	45
Honesty/Trustworthiness	36	28	37	23
Physical Ability	39	45	27	16
Verbal	15	2	22	6
Emotional Stability	50	80	45	67
Parental Relationships	36	28	48	94
General School	20	3	36	22
Same-sex Relations	54	80	60	97
Opposite-sex Relations	44	81	48	97
Overall Score	370	14	437	48

At post-test, Billy continued to perceive himself as weak in the some domains and experienced decreases in math, honesty/trustworthiness, physical ability, and emotional stability. In other areas his self-concept had improved over the year with increases in parental relationships, general self, general school, same-sex and opposite-sex relations, and self-

concept. Billy's overall self-concept increased dramatically from the 14th to the 48th percentile. Reasons for this increase in self-concept were explored during the interview.

Behavioural Outcomes

Both Billy and Bob completed the SDQ at two points in time Results for both testing points are detailed in Table 19.

Table 19

SDQ Results for Participant Four

	BILLY Self-rated				**BOB**			
SUB-SCALES	**PRE-TEST**		**POST-TEST**		**PRE-TEST**		**POST-TEST**	
	SCORE	**CATEGORY**	**SCORE**	**CATEGORY**	**SCORE**	**CATEGORY**	**SCORE**	**CATEGORY**
Total difficulties	19	A	18	A	19	A	10	N
Emotional symptoms	1	N	0	N	0	N	0	N
Conduct problems	8	A	8	A	5	A	Q	N
Hyperactivity	10	A	8	A	8	A	6	B
Peer problems	0	A	2	A	6	A	3	B
Prosocial behaviours	2	A	1	N	8	A	8	N
Impact supplement	0	N	2	A	2	A	0	N

N=Normal, B= Borderline, A=Abnormal

At pre-test, the strength in emotional stability identified in the SDQ-II (Table 17) was again evident in Billy's strengths and difficulties (SDQ) scores where he perceived himself to fall within the normal range. This was supported by Bob who scored Billy in the same way. However, in all other areas both Billy and Bob identified that Billy's behaviours fell within the

abnormal range. Billy reported that his behaviours did not have a significant impact on the family whereas Bob reported that they did.

At post-test, Bob reported improvements in Billy's behaviours over the time with hyperactivity and peer problems being the only areas he viewed as problematic and even then only in the borderline range. Billy, on the other hand, continued to see many of his behaviours as problematic which perhaps arose from the number of issues he had to deal with at school throughout the year.

Remaining Challenges

Many of the issues Billy faced are in relation to his ADHD. During the project interview, Billy was asked what he knew about ADHD as well as what impact he felt it had on him. Billy reported that he did not know about ADHD prior to commencing at CEP and thus did not know whether it caused him problems or not. He did, however, identify that now that he knew he had ADHD, he could recognise that it caused him problems at school. When asked what these problems were he said, *"....not listening, not following instructions, going and doing things that I want to do not what (yeah) I'm supposed to be doing*". Although not a part of the basic interview structure, Billy was so clear on these difficulties that it seemed worthwhile to talk more to him about this aspect of his life. Billy was asked whether he 'knew' he was doing these things and he strongly answered '*no'*. He went on to say that he just "*does what he wants and forgets what he is supposed to be doing*". He also acknowledged that "*when he is on medication he does not do this so much and does not get in much trouble*". Despite this understanding of the impact of his ADHD, Billy admitted that he did not like taking medication saying that "*I don't feel like myself*" and that he hated being "*hassled"* to take it by others. Bob however, was quite verbose in his interview when asked the same questions and was firm in his belief that the medication had helped Billy dramatically. He reported that

Billy's choice of friends had also improved and that perhaps Billy did not need the medication when his friendship groups were more appropriate. He was very happy with the progress Billy had made and did not think that Billy's ADHD caused him many problems anymore.

Billy continued to struggle with the issues around stigmatisation of ADHD and did not have an ongoing medical treatment plan. He appeared to be working toward leaving school, where his difficulties may be more evident, and entering the workforce where he felt he would not need the medication. During the year of undertaking pharmacological treatment, Billy managed to learn many skills, both academic and social, that were assisting him to take some control over his own life. When asked during the interview about his plans for the future, Billy stated that he had always had a plan for the future "*to get a job*" and that he still had the same plan now. He believed he was working toward that plan and that he was "*ready"* to get a job now. In terms of the type of work he wanted to do, Billy was unable to name anything in particular. In relation to remaining challenges, Billy named *"taking medication"* as his only challenge in the future.

Participant Five - Paul

Background: Family and Medical

Paul was 15 years of age at the time of entry into the project and had been attending CEP for four months. He lived with his mother Jackie and two younger siblings. Paul had been in foster care for a number of years previously due to severe incidents of sexual abuse involving a stepfather and had been returned to Jackie's care during 2005. Jackie was having many difficulties with Paul at home, predominantly in relation to his violent outbursts. Paul had been seeing a counsellor regarding the sexual abuse for a period of two years.

Paul had been diagnosed with ADHD at 8 years of age and had been on medication since that time apart from the period he was in foster care when he was taken off the

medication. Due to the emotional difficulties Paul was facing, the medication was not stable and he was consistently on trials of new medications or differing dosages.

Schooling: Past and Present

Prior to enrolment at CEP, Paul had been enrolled at a local high school but his attendance had been extremely poor. Paul reported firmly during the enrolment interview that this was due to bullying although Jackie (Paul's mother) saw a lot of the problem as school refusal and fear of being away from her. Paul's biological father, with whom Paul had never lived, was Indigenous and, thus, Paul began his time at CEP in the Indigenous unit.

When asked during the project interview about what school was like for him prior to coming to CEP, Paul responded with many negative comments. He reported that he was always in trouble, for "*wagging"* and getting into fights with young people or teachers. He also thought that the work was too hard and that he was "*failing everything"*. When asked whether he felt he was part of the school community Paul was clear that the answer was no. He felt *"left out"* of everything by both his peers at school and the teachers who he believed "*would not help me"*. Paul mentioned some particular teachers at his previous school that he had liked and named them as caring individuals who liked him.

While at his previous school, Paul knew he had been diagnosed with ADHD but did not understand a lot about it. He was able to name many of the medications he had tried and which were better than others. Paul believed that a measure of success for medication was in relation to his ability to control his anger and stated that when off medication he was "*angry all the time*".

Throughout the next few months, Paul participated in the Indigenous Unit class. As mentioned previously (see Participant 2), young people in this class were taught as a large group with varying assessment and expectations according to year level (and abilities). All

literacy activities were embedded in Indigenous topics and a large proportion of the day was spent in learning about Indigenous culture and history. The young people were encouraged to become active participants in the local Indigenous community and many community members were active within the school. The classroom had 30 to 35 young people and four staff members. They also had a transition officer who worked with young people entering work experience.

Observations indicated that Paul had several difficulties fitting in to the class. He was often in conflict with other young people and was bullied by others in the group. Whenever Paul experienced anything resembling bullying, his foremost reaction was to become very upset and want to go home. According to attendance records, in the first few months of his enrolment, Paul rarely spent a full day at school. To further exacerbate his difficulties in adjusting, Paul was on medication that was having a negative side-effect; his eyes would roll around uncontrollably. He was extremely scared when this would happen and would immediately attempt to have Jackie collect him. It became difficult to recognise when Paul's ailments were real as he had reached a stage of spending all of his time in the sickroom if Jackie refused to collect him. Paul was not spending any time in class but due to his presence in the school he achieved a good attendance rate.

In April 2007, Paul was moved into a smaller class where there were no more than 10 young people. The author was the teacher in this class and most of the young people in the class had significant difficulties with either their learning or their behaviours or their learning and behaviours. As mentioned previously (see Participant 1) the curriculum in the class focussed on social skills development through real-life activities with academic work focussing on skill development. Young people were encouraged to participate in the decision making regarding what and how they would learn and were guided towards a level of independence in

their work. Many learning activities occurred outside of the school ground in social or community settings.

Over time, it became evident through observations that although Paul had good basic skills, he lacked strategies to engage in learning and to take control of his own learning. On further investigation with a WISC IIIR and Adaptive Skills Assessment, it became evident that Paul met the criteria for Intellectual Impairment. Paul was subsequently ascertained in June 2007 as having Intellectual Impairment. Due to the presence of a disability, Paul met the criteria to be enrolled in the Queensland Certificate of Individual Achievement (QCIA) which is an alternative pathway to senior exit for young people with disabilities or conditions that severely impair their learning.

During the project interview, Paul was asked about his time at CEP and in particular his academic progress. Paul was confident that he was doing well and that he loved what he was learning at CEP. He was beginning to think of the future and had plans to investigate mechanics as a career. He was also able to name who on staff he could go to for the information he needed about career paths and had already made contact with those people. Although these answers appeared to indicate Paul's development of autonomy in his learning, his emotional difficulties continued to prevent him from moving forward at a reasonable pace. He continued to attend therapy with a counsellor and eventually began to share some of his story with other young people whom he identified as having experienced similar issues. This was quite empowering for Paul and the incidents of emotional turmoil were decreasing at school.

Jackie, who also participated in an interview, supported Paul's statements about his previous school saying that he was "*always in trouble"*. She was very disheartened by the unhappiness she saw in Paul during that period of time. She also expressed that although she had a relationship with some of Paul's teachers, she never really felt like part of the school

community as it was just *"too big"* and Paul was too difficult. The ongoing problems Paul had with treatment of his ADHD and medication trials were further exacerbating the issues that were occurring in school. When Jackie was asked about Paul's time at CEP she was quick to reply that "*It's been a big turnaround. He actually wants to come to school*…..". She was thrilled to see Paul's enthusiasm for school and reported that he often came home and talked to her about what he was learning and what he had been doing at school. Jackie expressed her joy at seeing Paul so happy with school and actually making plans for the future. It was a great relief that she no longer has to collect Paul from school during the day and he had related to her how he managed to deal with issues himself. Despite not needing to come to school each day, Jackie reported that she felt comfortable and accepted when she did come and that she willingly participated in school social events. She had a strong sense of being part of the school community.

Peer Relationships

During the enrolment interview it was identified that Paul had significant difficulties with peer relationships. He had experienced bullying at previous schools and was unable to identify any significant friendships from school or home environments. Jackie supported this and believed that Paul's emotional disturbances had prevented him from forming friendships. Observations of Paul when he first began at CEP supported Jackie's belief as Paul did not make any social connections with his peers and was often in conflict with others. His usual response to this was to spend time in the sick room or to go home.

The project interview, which occurred at a time that Paul was well settled into his small class setting, explored Paul's perceptions of his time at CEP in relation to his peer relationships. He was able to identify that in the early days he had problems with many of the young people and did not like attending. He was also very aware that over the previous year he

had learnt lots of ways to deal with conflict and did not lose his temper as he had in the past. Paul also identified that this increase in his skills was assisting him to make friends more easily. He identified that teachers had helped him through these "*sticky situations"* but that now he was able to do it himself.

Observations over the time between the two testing points seem to indicate that while Paul was coping well academically, he continued to have issues around peer relations which immediately evoked other underlying emotional issues. A lot of time was spent during the year with Paul working through problem-solving strategies and ideas for managing feelings. He showed great improvement in this area and his need to go home or call Jackie decreased dramatically. His attendance reflected this in that over a 30 day period in August 2007 his attendance was 29 days (97%) and all of these were full days. Jackie however, still reported that Paul had significant difficulties with anger at home. He did not appear to have generalised the skills he learned at school to the home setting.

Academic Outcomes

Paul participated in a series of tests at two points in time. The results of the academic testing are shown in Table 20.

Table 20

Academic Testing Results for Participant Five

TEST	PRE-TEST	POST-TEST
Probe Reading Test - Decoding	11 years	13 years
Probe Reading Test - Comprehension	10 years	10 years
South Australian Spelling Test	10 years	10 years
Test of Whole Number Computations	23/39	27/39

Results at pre-test indicated that academically, despite the emotional turmoil Paul was experiencing at this point in time, he had some good basic skills in literacy and Maths. Over the year Paul achieved some gains in his academic results with his reading increasing two years from 11 years to 13 years. His comprehension scores did not improve at all which, from observations of Paul's reading practices could be attributed to his increasing hyperactivity and decrease in attention to detail. This could similarly account for his lack of progress in spelling. Paul rushed through most of his work and often overlooked the micro skills entailed in specific tasks. In Maths, Paul's score increased from 23 to 27 out of 39. Observations over the year indicated that Paul had good basic Maths skills but needed extended practice to retain new concepts or application of his skills. His poor concentration made it difficult for him to sustain the time on-task needed to consolidate his learning. Paul's emotional difficulties over the year have had a considerable impact on his learning in that on average twice per week, Paul was incapable of operating in a classroom and required withdrawal to another space to talk through his feelings. In addition, Paul had increasing episodes of violent behaviour which required him to be removed from the classroom. Given these factors it was surprising that Paul still managed to progress in some academic areas.

Social Outcomes

At pre-test, Paul was able to acknowledge his academic skills in maths but not in literacy. Results on other areas of the SDQ-II, shown in Table 21, appeared to indicate that Paul had a sound self-concept in all areas and was confident in his abilities. These results were surprising given that Paul was not exhibiting this confidence and was constantly avoiding engagement in the class and school in general at this time.

Table 21

SDQ-II Results for Participant Five

SUB-SCALES	PRE-TEST		POST-TEST	
	RAW SCORE	PERCENTILE	RAW SCORE	PERCENTILE
Math	55	92	59	97
Physical Appearance	29	40	23	22
General Self	53	62	52	58
Honesty/Trustworthiness	46	52	49	64
Physical Ability	46	60	33	31
Verbal	36	33	45	63
Emotional Stability	41	52	34	27
Parental Relationships	43	60	39	40
General School	52	79	52	79
Same-sex Relations	41	48	40	17
Opposite-sex Relations	29	44	26	18
Overall Score	476	69	452	56

Post-test results indicated a decrease in most areas of self-concept except for the cognitive areas of verbal and maths and the area of honesty/trustworthiness. Despite the decrease, the results on this test appear to more closely match the observations of Paul's behaviour than do the results of the pre-test. The large decrease in perception of same-sex and opposite-sex relations to 17 and 18th percentile respectively, are commensurate with observations of Paul's peer relationships. Likewise Paul's results of parental relationships at 40th percentile are more realistic than his previous result of the 55th percentile given the obvious conflict that has been observed to exist between Paul and Jackie. Consequently, it is

difficult to posit whether the decreases in self-concept identified between the two testing points are evidence of actual decreases or improved accuracy on Paul's behalf.

Behavioural Outcomes

The SDQ was used to measure behavioural outcomes across the two points in time. Both Jackie and Paul completed the test results which are displayed in Table 22.

Table 22

SDQ Results for Participant Five

	PAUL Self-rated				**JACKIE**			
SUB-SCALES	**PRE-TEST**		**POST-TEST**		**PRE-TEST**		**POST-TEST**	
	SCORE	**CATEGORY**	**SCORE**	**CATEGORY**	**SCORE**	**CATEGORY**	**SCORE**	**CATEGORY**
Total difficulties	31	A	21	A	32	A	29	A
Emotional symptoms	10	A	5	N	10	A	8	A
Conduct problems	7	A	4	B	8	A	6	A
Hyperactivity	8	A	7	A	8	A	9	A
Peer problems	6	A	5	B	6	A	6	A
Prosocial behaviours	7	N	8	N	8	N	7	N
Impact supplement	0	N	0	N	5	A	8	A

N= Normal, B= Borderline, A= Abnormal

At pre-test, Paul perceived himself as falling within the abnormal range in all scores except the prosocial area. Jackie supported these perceptions scoring the same as Paul. However, in terms of impact on the family, Jackie reported that the behaviours had

considerable (abnormal range) impact whereas Paul reported that they fell within the normal range.

At post-test, Paul and Jackie's perceptions of his behavioural progress varied greatly. Paul perceived gains in all areas of the SDQ except for the hyperactivity scale where he acknowledged the continuation of difficulties. Jackie on the other hand, perceived little difference from the earlier scores again reporting that Paul fell in the abnormal range for all areas except the prosocial area. Of particular interest is the impact score where Paul scored 0 which indicated a belief that his behaviours did not cause any difficulties to others whereas Jackie scored 8 (an increase of three points from the initial score) which indicated that she perceived Paul's behaviours to have significant impact on others and to have increased in severity.

Remaining Challenges

When asked during the project interview about remaining challenges for himself, Paul recognised that his ADHD still caused him some problems but that hopefully the medication would help him overcome those problems. He acknowledged that he still had difficulties with, "*controlling my anger*", but attributed his anger to his ADHD.

Although Jackie was pleased with Paul's progress at school, she still had a number of concerns regarding Paul's behaviours. It appeared that the conflict resolution skills that Paul was practising at school were not generalising to home and his anger continued to be a problem. At times Jackie had sought respite care for Paul to ease the burden of his behaviours on the rest of the family. Jackie believed that most of Paul's problems were caused by his ADHD which she felt was not yet stabilised. She also acknowledged that Paul had huge attachment issues and often "*reverted to two and three year old behaviours*...". Having just recently found out that Paul had an Intellectual Impairment had helped Jackie to understand some of the difficulties she experienced at home, but having two younger children made it hard

for her to focus the amount of attention on Paul that he seemed to require. On talking further Jackie acknowledged that a lot of Paul's difficulties were related to his prior sexual abuse but reported that she was at a loss on how to '*fix that up'*. Overall Jackie felt that she was in a positive partnership with the school and that working together things could only get better.

Although each participant in the study had an individual story and achieved individual outcomes, as a collective group many similarities arose both in their stories and in the outcomes they experienced. By exploring these similarities, or themes, the study aims to achieve greater insight into the outcomes of adolescents with ADHD as well as the effectiveness of flexible learning for this particular group. In addition, the findings will provide implications for further research in the area of interventions for young people with ADHD.

Part 2 - Cross Case Analysis

Part 2 presents a cross-case analysis based on the interviews with the participants (and their parents/carers) as well as the findings from the quantitative test results discussed in Part 1.

Academic Outcomes

Four specific areas of academic outcomes were explored during the study, namely, reading (decoding), comprehension, spelling, and math (number concepts). Three of the five participants showed an increase in their reading age, as measured by the PROBE reading test, with two of these increasing by six months (Participant 3 and 4) and the third by two years (Participant 5). Of the other two participants, one had recorded the highest reading age score on the pre-test (Participant 1) and managed to maintain his skills whilst the other had no change from his initial test results (Participant 2)

In terms of comprehension of reading, four of the five participants showed an increase in their comprehension age from six months to one and half years. The fifth participant showed

no increase from his initial test (Participant 5). Increases in spelling age, as measured by the South Australian spelling test, were achieved by three of the five participants (Partcipants 2, 3 and 4). The increases varied from six months to one and half years. The remaining two participants showed no increase. The maths test which concentrated on number concepts indicated an increase for four of the five participants. One participant achieved a considerable increase from 9/39 to 17/39 (Participant 3). The fifth participant showed a decrease in his score (Participant 2).

Overall, most of the increases achieved by participants were commensurate with the length of time between the two testing points with only a select few making considerable gains (determined as greater than the length of time between the testing points). Important gains were made by one participant in reading, one in comprehension, one on maths, and one in spelling. However, another participant began the study with high scores in reading and spelling and maintained these scores on the post-test.

Two of the participants in the study (Participant 2 and 5) require special mention due to the presence of Intellectual Impairment. For one of these young men, the impairment was discovered during the course of the study whilst the second was known to have an intellectual impairment prior to enrolment in the study. Whilst acknowledging that the presence of this impairment has implications for the findings (i.e., how much does the impairment impact on the results), the presence of impairments is indicative of the multiple problems faced by students with ADHD who attend CEP. The two participants also require mention as being part of the Indigenous Unit at CEP which operates differently from other classes. The Indigenous Unit consists of a large class with a high number of staff to support individuals in their learning. Philosophically, the staff believe that being part of a larger community is more conducive to cultural identity and thus they combine what could be three classes into one with differentiated curriculum for individuals and/or small groups. One of the participants

(Participant 5) found it particularly difficult to operate in this large class environment and was moved to a small class outside of the Indigenous Unit five months after enrolling in the present study. Perhaps due to this move, this participant achieved a considerable increase in his reading score whilst making a small gain in math and maintaining his score in spelling and comprehension. The second participant from the Indigenous Unit (Participant 2) remained there during the course of the study. Following completion of the post-test, this participant was moving to a special education unit at a local high school due to difficulties he was having at CEP. He achieved an increase in comprehension and spelling, no increase in reading and a decrease in math over the period of the present study.

Overall, the academic outcomes from the study were not commensurate with the level of support the participants experienced in the learning environment (i.e. small class sizes, some one-on-one support, scaffolded learning). Most of the gains made minor over the time-frame of nine months with only a small few making great gains in any areas. It is worth mentioning however, that these young people all had a history of negative experiences with schooling and many had other issues in their lives, so any gains should be viewed in a positive light. In addition it is worth noting that during the interview all of the participants made comments relating to their academic progress at CEP such as; *"I can pick my subjects and have a say in what I do?, "....got a good education this year....:, "...able to get it (help) as the teachers have the time to sit down and talk you through it:, "I'm heaps better at spelling now...", "....I like learning here (at CEP)".* This seems to indicate that their perceptions of their progress are greater than their actual progress (as indicated by tests). Given the disengagement with education experienced by all the participants prior to enrolling at CEP, it is not surprising that little real gains occurred and perhaps with a longer period of time, more progress would be evident.

Social Outcomes

Social outcomes were measured with the Marsh Self-Descriptive Questionnaire (SDQ-II) which measures a young person's self-concept in a variety of areas, including academic areas, personal areas, and social relationships. One caution that needs to be mentioned in relation to the test is that when a young person's self-concept decreases in a certain area, it may not necessarily indicate a poor outcome but may be an indication of improved awareness of their specific strengths and weaknesses. For example, two of the participants showed a decrease in their self-concept for the academic areas of verbal, math, and general school, but their initial scores in these areas did not coincide with their academic test scores.

Another caution worth mentioning in relation to measuring self-concept is that the variables that affect self-concept are not confined to one area of a young person's life. Therefore, any increase or decrease in self-concept experienced by the participants could be related to a home situation, a school situation, a health situation, or any number of factors. Four of the five participants in the present study showed an increase in their self-concept in relation to their relationships with others. For one participant (Participant 5), a decrease was evident in all three areas relating to relationships (parent, same-sex, and opposite-sex). This particular participant was experiencing considerable emotional turmoil in his life and this was affecting his ability to relate to others.

A third key area tested by the SDQ-II is that of personal qualities (i.e. emotional stability, physical appearance, honesty/trustworthiness, and general self). The results for all young people varied greatly in this area with all five participants reporting increases and decreases across the areas tested. Again, it is to be remembered that this area of self-concept is affected by all environments in which the young person participates.

As a test on its own, the SDQ-II is open to many interpretations regarding its findings. However, when compared with a variety of other tests (i.e., academic tests, strength and

difficulties questionnaire) the SDQ-II provides support for the findings and insight into how a young person perceives him/herself. Consequently, a decrease or increase is not to be considered with negative or positive connotations, but instead it can be used to determine the accuracy of the participants beliefs (i.e., "I am no good at math") and assist them to reflect more accurately on their self-perceptions.

During the interview process, participants were asked specifically about their social relationships before and after attending CEP to support the finding from the SDQ-II. All five participants were very clear that they had "*more friends"* and better relationships since beginning at CEP. Some comments that were made include: *"...they (teachers) talk to you and not just about your work", "....they (peers) will all stick up for me", "I have no trouble with bullying anymore", "..you get treated like a human, like you get chances here....you get treated like a person, not like an animal".* These comments together with observations of the participants in the school setting, seem to indicate that overall, the five participants increased in their social relationships and have more confidence in a number of areas of self-concept.

Behavioural Outcomes

Outcomes in various behavioural areas such as conduct problems, hyperactivity, emotional symptoms, and peer problems, were measured by the Strengths and Difficulties questionnaire (SDQ). All five participants and their parents/carers completed this test at the pre-testing and post-testing point. Two other areas measured by this test include pro-social behaviours and impact (of behaviours) on family.

All five participants in the study showed an improvement in two or more of the behavioural areas tested with only two participants (Participant 1 and Participant 2) reporting an increase in problematic behaviours for any of the areas. However, the parents/carers reports did not support the beliefs of the participants, with four of the five parent/carer reports

indicating little change in behaviours except in specific categories (i.e., one improvement in conduct problems – Participant 3, one improvement in prosocial behaviours – Participant 2). One parent (of Participant 4) reported a vast improvement in all areas tested yet the participant in this case did not perceive the same except for one area (prosocial behaviours).

The impact supplement portion of the SDQ refers to how the behaviours exhibited have an impact on the family. Mixed results occurred in this area with two participants reporting no difference (Participant 1 and Participant 5), two reporting improvement (Participant 2 and Participant 3) and one reporting a more severe impact (Participant 4). Four of the five parents/carers reported no difference in the impact on the family with one reporting an improvement in impact of the behaviours (Participant 4). This was also the parent that reported a vast improvement in all behavioural areas.

As many of the behaviours tested in the SDQ correlate with a diagnosis of ADHD (hyperactivity, conduct problems, peer problems) it is important to make note at this point that of the five participants only two were on medication for ADHD (Participant 4 and Participant 5) and one of these two stopped taking his medication half way through the study (Participant 4).

Although all participants in the study reported an improvement in their problematic behaviours, it appears that this improvement did not generalise to other settings such as the home and family environment. This has important implications for future interventions that aim to address decreasing problematic behaviours in that it may be necessary to design an intervention in consultation with and in collaboration with parents/carers to achieve the best outcome.

Observations of the participants over their time at CEP support the findings from this test and would conclude that four of the five participants showed decreases in problematic behaviours and increases in prosocial behaviours over the year of the study (Participants 1, 2, 3

and 5). During the interview the participants were asked about their behaviour and made comments such as *"I've learned to walk away....", "I don't get into fights as much anymore", "I've had a change in my attitude".* One exception to this is the participant who stopped taking medication for his ADHD halfway through the study (Participant 4). He struggled with the stigmatisation of taking "*chill pills"* yet was clear in acknowledging that when not on medication he would *"....do what I want and forget what I am supposed to be doing".* He also acknowledged that he often did not "*know"* he was doing things wrong and that the medication did help him to realise this but he just 'didn't feel like himself' when he was on medication.

Emerging Themes

Although the three focus areas under analysis during the present study were academic, social and behavioural outcomes, when coding the interview transcriptions and analysing the data gathered during the study, it became apparent that other themes were also evident and deserve mention. Their incorporation in the findings is consistent with Braun and Clarke's (2006) suggestion about the inclusion of themes that contribute to a greater understanding of the research questions.

A number of the interview questions related to the young person's experiences at previous schools (see appendices 4 & 5) and focussed on areas such as school work, attendance, relationships with teachers and other students, connectedness to the school, and general happiness. When invited to discuss their experiences in relation to these prompts/questions, a number of themes (and sub-themes) arose that were common across most of the participants specifically: unhappiness with previous schools; current connectedness to school community; improved relationships; lack of knowledge about ADHD, and; future plans and remaining challenges. Each of these themes will now be discussed.

Unhappiness with Previous Schools

The general theme of unhappiness with previous schools arose for all participants in the study. While some were unable to attribute reasons to this unhappiness, others were clear about them and readily gave voice to the causes. The most common cause was "*fighting"* which was identified by four of the five participants as the major reason for their lack of connectedness to previous schools. Three of the five had experienced bullying which often led them to be involved in fights that resulted in suspensions and/or poor attendance. In one particular interview, the young person stated that as a sanction for getting into a fight that had been caused by bullying, he "*....just got kicked out. They didn't even listen to me....".* This theme of being silenced and having no power or control arose throughout all the interviews and appeared to be a major factor that caused the poor attendance (evident for all participants) at previous schools.

A sub-theme, and possible cause, of being unhappy in previous schools was that of not being connected to the previous school community which arose for three of the participants and both of the parents interviewed. One parent believed that her son had not made the 'transition' to high school successfully which was supported by other parents/carers interviewed who identified that Year 8 (the first year of high schooling in Queensland) was the most problematic year of their child's school life. Many of those interviewed identified the class (and school) size as being a major factor that prevented connectedness from occurring. For the parents/carers interviewed, both made comments that the only contact they had with the school community was *"....when he was in trouble or suspended*". One parent reported that his son had been absent for 72 days before he knew about the absences.

When asked to comment on their learning at previous schools, three of the participants identified that the work was "*boring*" and when they needed help it was impossible to access because of the number of young people in the class. One exception to this claim came from a

participant who had attended a 'Special Education Unit' in a previous school and stated that he enjoyed his learning and his teachers. His main reasons for coming to CEP were to develop his Indigenous identity and avoid the racism he experienced in other schools. Four of the five participants expressed negative attitudes to learning and to the teachers with whom they had come in contact. When asked to elaborate and identify 'good' teachers, they were able to name aspects such as *"....they cared about me", "....he gave me breaks often which helped", "....she listened to me instead of just throwing me out of class"*. For all of the participants, it appeared that the relationships established (or not established) in a school setting, were as important as the learning that occurred. This aspect of relationships extended to peer relationships in the previous school settings with four of the five participants identifying that they had few, if any, friends although none of the four were able to link their poor attendance as being a causal factor in these poor peer relationships.

Current Connectedness to School Community

The next stage of the interview related to the young person's experience at CEP and explored the same areas of school work, attendance, relationships with teachers and other students, connectedness to the school, and general happiness. Two themes were evident, namely, connectedness and relationships.

The most obvious theme that arose during this part of the interview was that of feeling 'connected' to the school which was expressed by all five participants and the two parents. During the interview the participants and parents made comments supporting this connectedness to the school:

- *"I get treated like a person here not like a student….or like a kid" (participant 4)*
- *"you let me know what's going on for him at school and I know I can come up anytime I want" (parent 2)*

- *"....here you get to have a say in things"(participant 3)*
- *"....the teachers talk to me about other stuff, not just school stuff, and I think they care about me" (participant 5)*
- *"I always felt left out at my other schools, but here I can do whatever I want to do"(participant 1)*
- *"....there is always someone who can help me out when I am in 'sticky' situations" (participant 5)*
- *"I'm happy here...."(participant 1).*

When asked to elaborate on the possible reasons behind this increased connectedness, the young people were readily able to name a number of factors such as smaller class sizes, help available when needed, feeling accepted, less bullying, good relationships with staff and students, more control of (and thus interest in) learning, and "*fairness"* experienced in all areas of their life at school. The class sizes appeared to be a major factor in their improved happiness in school, with the exception of two participants (Participant 2 and Participant 5), both of whom had been attending the Indigenous Unit within the school which operates with a larger class of 35 young people and four staff. One of these participants was in the process of moving back to a Special Education Unit (SEU) in a mainstream school as he preferred the 'smaller class' environment that he had previously experienced in an SEU. The other participant had been experiencing severe emotional and social difficulties and the larger class environment was not conducive to his engagement in the school environment. He was moved to a smaller class (10 young people with two staff) and major improvements began to occur in all areas following this move.

Improved Relationships

Another theme that arose strongly during the interview was that of improved relationships with teachers/adults and with young people. All five of the participants reported improved friendships and an improvement in skills when they had to deal with relationship conflict. When asked to explore the reasons behind their improved relationships with teachers, many factors were attributed such as *"…they do interesting work", "I get a say in when and how I want to learn", "they listen to me and we work it out instead of just throwing me out…", "they care about me*". Four of the young people expressed that they found their learning interesting and fun and both parents interviewed spoke of their child 'sharing' what they had learned at home and talking more about what they were doing at school and/or what was coming up in the future.

In relation to peer relationships, all of the participants reported an increase in friendships. Comments during the interview process supported this, such as;

- *"….people all stand up for me here" (participant 2)*
- *"I have 'real' friends here, not just people I know"(participant 3)*
- *"….cause they (teachers and students) would look out for me when I get into trouble or need help" (participant 2).*

Not surprisingly, this increase in 'happiness' with the school environment had led to increased attendance for all the young people interviewed.

Lack of Knowledge about ADHD

During the interview, the young people were asked about their knowledge of and problems experienced from having ADHD. A major theme that arose from these questions was in relation to the lack of knowledge young people had about ADHD and their lack of understanding about the difficulties associated with it. For most, the notion of having ADHD

was primarily related to being hyperactive and thus given that three of the five participants did not exhibit high levels of hyperactivity, they did not see their ADHD as a problematic thing. All five of the participants attributed their "*bad behaviour"* and their *"aggression"* (present for four of the young people) as being the main problems they experienced with ADHD. For those who had been (or were still) on medication, they were clear in stating that they did not feel as "*angry*" when taking the medication. None of the participants were able to identify academic or social gains from the medication. At the time of the interview, only two of the participants were taking medication and one of them was reluctant to take it due to the stigmatisation of having to take it for reasons mentioned previously.

Future Plans and Remaining Challenges

The final stage of the interview focussed on questions relating to the future such as, plans for the future and challenges that remain. In relation to having plans for the future, only two of the five were clear (and realistic) about their plans (participants 1 and 3). Interestingly, both these participants were also able to identify that they had come to attribute their successes or failure to themselves rather than to others. One of these two young people believed that his greatest challenge remaining was to take control of his drug use but he believed that this was possible for him. Of the remaining three participants, they were vague or unrealistic about their future prospects, with one wanting to go to university and do '*mechanics or fencing'*, another just wanting '*a job'*, and the third still unsure of what he wanted to do. These three young people continued to view their behaviour as a challenge in the future but were unable to be more specific about their 'behaviour'. For one of these three, he saw his biggest challenge as being whether or not he stayed on medication. He was aware that his life was happier and less troublesome when he was on medication, but was struggling with the changes in his personality and stigmatisation.

Conclusion

While each of the participants involved in the study has an individual story of previous experiences and journeys through school, when considered as a group there are many similarities in the challenges they face and their interpretations of their experiences. The present study aimed to investigate the academic, social, and behavioural difference over time for the participants involved in attending a flexible learning centre and to explore the factors that the participants attributed to any changes that may have occurred over time. By designing the study with a variety of data collection methods, it was hoped that the findings would be both richer and more valid thus able to provide valuable information for the research field. This chapter has brought together the data from the five cases and examined it through within-case analysis as well as using cross-case analysis to identify the themes that arose. During across-case analysis, additional themes were identified that provided insight into the perspectives of the participants and allowed the researcher to explore possible reasons for the findings from the data as well as providing topics for future research. As validity of any study is enhanced through transferability (see p. 73), these additional findings provide future researchers with a richer picture of the participants and their life experiences. Chapter 7 will discuss the findings in relation to current research as well as make recommendations for practice and suggestions for future research.

CHAPTER SEVEN
General Discussion

The present study aimed to investigate the academic, social and behavioural outcomes of five young people with ADHD attending a flexible learning centre and to explore the factors that may have contributed to any changes that may have occurred over time. Findings from multiple data collection methods were reported in the preceding chapter. Chapter 7 discusses the findings, recommendations and limitations of the study and draws specific conclusions that may offer researchers and practitioners ideas on intervention strategies and/or questions for further exploration. As the study focussed on the academic, social and behavioural changes over time, these will be discussed in some depth initially in order to ascertain whether change did in fact occur.

Academic Outcomes

Participants in the study were tested academically at two points approximately nine months apart using three tests, the Prose Reading, Observation, Behaviour and Evaluation of Comprehension (PROBE; Parkin et.al., 2002), the South Australian Spelling Test (SAST; Westwood, 2004), and the Test of Whole Number Computation (ACER, 1969). Given that a number of the participants had considerable learning difficulties and/or impairments, it was decided that progress across time was a more valid measure than comparison with age-appropriate peers. Three of the five participants scored at least four years below their chronological age at the first testing point in all areas, while the remaining two scored extremely low in the maths test but had good scores in reading and spelling.

Between the two testing points, the young people engaged in the curriculum at the flexible learning centre in three distinct class groups. Two of the young people were in a class

that predominantly catered for young people with special needs and contained 10 young people and two staff (Participant 1 and Participant 4). A third participant joined this class midway through the study (Participant 5). One other participant attended the Indigenous Unit within the school which contains 35 young people and four staff (Participant 2). The remaining participant, who was in his senior phase of learning, attended the senior class which contained 20 young people and two staff (Participant 3). Although slightly different methods were used in each class, they all operate within the philosophy and ethos of the school as being focused on individuals and based in healthy relationships (with staff and other students).

The academic changes (on all tests administered) across the two points for most of the participants were no more than one year. In one case, the results remained the same and in two cases the maths results declined. Given that many of the approaches used in the setting are considered 'best practice' (te Riele, 2007) and have research supporting their use as successful interventions for young people with learning difficulties, it is surprising that the academic progress was no more than what would be expected over a given period of time. These findings are consistent with those of a similar study conducted by Hawkins, Doueck, and Lishner (1988) in which an intervention focussing on instructional practices was designed to improve the academic achievement, behaviour, and social bonding of low achievers in a mainstream setting. The study failed to produce significant achievement differences although behaviour and social bonding to the school improved significantly (Hawkins et al., 1988). Hawkins et al. were unable to explain the failure but did suggest that "…improvements in mainstream classroom instructional practices…. may affect attitudes and behaviours directly, rather than indirectly through increased achievement…" (p. 46). Purdie et al. (2002) provide a possible explanation for this lack of academic achievement by reminding us that the behaviours exhibited by young people with ADHD will have a large impact on their learning, as the behaviours in question are indeed prerequisites for successful learning (Purdie et al., 2002).

Whilst it would have been valuable for the study findings to show academic improvement and thus provide solid evidence to support the teaching practices used within Centre Education Program, this was not the case. What did arise in the interviews however, were that all the participants expressed an enjoyment of learning and a belief in themselves as learners, which had not existed prior to attending this setting. Perhaps these results are the signs of early reengagement in learning over the short term (one year) and further testing on exit from the setting may indicate improved academic achievement. Whatever the reasons, further longitudinal research is necessary to explore the findings of this and other studies in relation to academic achievement in young people either with ADHD or who are considered 'low achievers'.

Social Outcomes

Social interactions are best measured through naturalistic observations and in the present study involved the researcher as principle observer and thus in the role of 'participant observer' (Cresswell, 2005). During the course of the interview, some of the observations made by the researcher were presented to the participants to allow them input into the interpretations of the observations. The SDQ-II which measures a young person's self-perception in a variety of areas, also contained subscales that could add validity to the observations (e.g., same-sex relationships, opposite-sex relationships, and parent relationships). For a detailed individual analysis of the differences in the SDQ-II across the two points, see Chapter 6.

Much of the research in the area of social skills in young people with ADHD has found that they are frequently rejected by their peers and if aggressive behaviours are present, the rejection is stronger (Hinshaw, 1992). These findings were supported in the present study both through initial observations and the interviews in which most of the participants mentioned

difficulties with friendships in the past. Most of them attributed this failed social functioning to their aggression and to being bullied by others. Four of the participants claimed a history of either getting into fights or being bullied. Unever and Cornell (2003) propose that the inappropriate behaviour exhibited by young people with ADHD in social settings can elicit aggressive behaviour from their peers and/or their poor social status may attract the attention of the bully. Whatever the reasons, the experience of bullying was one that occurred for most of the participants in the present study.

Past studies have reported that the absence of 'self-control' in young people with ADHD is a major factor that leads them to become bullies themselves, whereas in terms of being the victim of bullying, self-control is not the major factor (Unnever & Cornell, 2003). Whilst most of the participants in the present study identified as victims rather than perpetrators of bullying, they all spoke of their aggressive behaviours but did not indicate that being bullied was a reason for this aggression.

During the interview process, all the participants identified an increase in friendships since attending the current school. Two of the participants mentioned in particular that they had been involved in less bullying and fewer fights. Observations of the five participants showed that all of them began their time at the school with poor social status. At first, they were often involved in either bullying or fighting incidents and had poor skills for making and maintaining friendships. Due to the size of the school (90 students), it was easy to 'catch' the incidents and begin processing them immediately which involved the young people meeting together and with the support of an adult, negotiating a way of operating that would show respect to each other. The meeting would also discuss strategies for avoiding such altercations so that social learning occurred from the incident. The participants in this study were engaged in a large number of such meetings and over time showed the ability to use the strategies they had developed and reduce the incidents of social altercations. Stroes et al. (2003) support this

approach to social learning and found that young people with ADHD lack the skills to engage in conversation and by explicitly teaching these skills we may assist the young person to overcome these deficits. The Summer Treatment Program (STP) which formed part of the MTA study involved a focus on social skills training and problem solving skills training and found that improvement in the peer relationships of young people with ADHD were noticeable following practice in these skill areas (Chronis et al., 2004). Whilst many of the participants in the study continue to have some social deficits, it would appear that the concentration on social learning during real-life incidents in the school setting, has led to an increase in social competence amongst the young people which has subsequently led to an increase in peer friendships. Perhaps the introduction of explicit teaching of these skills in classroom settings, as conducted in the STP, would enhance this social competence further and lead to generalisation of the skill to other areas (Chronis et al., 2004).

Despite the observations of improvement of social skills amongst the participants of the present study, when investigating the results of the SDQ-II it would appear that the young people do not consider themselves 'competent' in social situations. Four of the five participants reported a decrease in their self-concept in relation to same-sex and/or opposite-sex relationships despite observations indicating differently. Perhaps these findings can be explained by the 'normal' difficulties in social interactions experienced in social interactions amongst adolescents of this particular age group (13-16 years). When factoring in the taking of medication by two of the participants, there was no difference in their social relationship self-concept nor in the observations of their social competence. It would seem though that despite the results on the SDQ-II, the observations indicate vast movement in this area for young people with ADHD in the flexible learning centre setting.

Behavioural Outcomes

The tool used to measure behavioural improvements in the study was the Strengths and Difficulties Questionnaire (SDQ). In Chapter 6, analysis of the findings from this measure were discussed for individual participants. When however, the results were considered as a whole, interesting trends arose. Of interest is the finding that, with the exception of one participant, the parent reports on all the areas showed much less improvement than that expressed by the young people. Most of the young people who participated, identified improvement in most areas with two specific individuals identifying an increase in 'conduct problems' and 'peer relationship problems'. Observations of the young people in the setting would lend more support to the self-reports of the young people, as across all participants there had been a vast improvement in their behaviours. More notably during observations, it became clear that the young people were gaining a cognitive awareness of their behaviour and this was assisting them to gain control over their actions and behaviour (Robinson, Smith, Miller, & Brownell, 1999).

The school does not adopt a functional behaviour analysis (Schloss & Smith, 1994) approach to behaviour management, but many of the aspects of such a program (i.e., shaping behaviours through the use of rewards, positive reinforcement, use of home/school diary) are employed in individual classes and may contribute to the observed improvement in behaviour (Raggi & Chronis, 2006). Other strategies that may account for the positive improvements in this area include the involvement of the young people in their learning. In the school, young people negotiate their way through their learning and with support from a teacher, design a program of learning that suits them. Weaver (1992) proposed that the introduction of choice in what is learned in a school setting increases the probability of the young person taking responsibility for their learning, and thus increases ownership in the learning process. In addition Weaver proposed that choice (in what is learned) is critically linked to motivation and

subsequently engagement in the task/subject (Weaver, 1992). Observations and data collected from the interviews seem to suggest that this increased motivation and ownership over what is learned has contributed to the improvement in behaviour amongst participants, as measured by the SDQ and observed in the school setting. Comments made by the participants that support this include;

"I'm allowed to do what I love best….." (Participant 3);
"I get to have a say in what we learn" (Participant 4);
"I can pick my subjects and have a say in what I do" (Participant 5);
"I like learning here" (Participant 2).

Much of the research into improvement of behaviours in young people with ADHD has focussed on training parents in behavioural management techniques (Chronis et al., 2005). As a school setting this type of training is not offered to parents/carers. It would appear from the findings that the skills the young people are gaining in the school setting, are not generalising to the home setting. Researchers who focus on parent training (Chronis et. al., 2001; Fabiano & Pelham, 2003) would indicate no surprise in these findings. Perhaps the school setting needs to address the generalisation of skills through offering some form of parent training (Chronis et al., 2001; Fabiano & Pelham, 2003). Although this improvement in behaviour has not led to an improvement in academic progress, perhaps it has removed other obstacles to success in their life such as poor social relationships?

Emerging Themes

The notion of 'school bonding' or 'connectedness' has a vast body of theoretical and empirical support as a critical element in the developmental experiences of children (Abbott, O'Donnell, Hawkins, Hill, Kosterman & Catalano, 1998; Catalano, Haggerty, Oesterle, Fleming, & Hawkins, 2004). Three key theories are attachment theory (Bowlby, 1973), control

theory (Hirschi, 1969), and the social development model (Catalano & Hawkins, 1996). Attachment theory (Bowlby, 1973) refers primarily to the processes that occur as an infant interacts with his/her parents and the internal models that arise from this bonding to shape how the child forms social connections with others. The foundation that is built during this critical stage of a child's life leads to either positive or negative relationships in the future. Researchers have found that when young people bond with adults other than their parents, it can have a positive affect on the child's resilience to adversity (Catalano et al., 2004).

Control theory (of deviant behaviour) refers to the concept of bonding within a socialisation unit (such as school) which has four elements: involvement in the setting; attachment or affective relationships; investment in/commitment to the setting; and belief in the values of the setting (Hirschi, 1969). The theory proposes that once the bonding is firmly established, the social bond creates an informal control that reduces problem behaviours that interfere with school success (Catalano et al., 2004).

The third theory behind school bonding or connectedness developed by Catalano and Hawkins (1996), whilst similar to control theory, narrows the concept of bonding to being composed of attachment and commitment to the socialising unit. The Social Development Model (Catalano & Hawkins, 1996) proposes that children are socialised through four processes: perceived opportunities for involvement in activities and interactions with others; actual involvement; skill for involvement and interaction; and, perceived rewards from involvement and interaction. However, the authors remind us that it is only when the socialisation processes are 'consistent' that a social bond of attachment and commitment develops between the young person and the people and activities of the socialising unit (Catalano et al., 2004). This perspective, like the other two theories, suggests that once the bonds to school are firmly established, they "…inhibit behaviour inconsistent with the norms and values of the school" (Catalano et al., 2004, p. 162).

Several studies have provided empirical support for the effect of school bonding on problem behaviour as well as supporting school bonding as a major contributor to the reduction of 'risk factors' and the increase in 'protective factors' for problem behaviour in a young person's life (Hawkins, Catalano, & Miller, 1992; Hirschi, 1969; Werner & Smith, 1992). The work on risk and protective factors is based on the premise that a young person's environment has a range of risk and protective factors that increase or decrease the likelihood of them developing an anti-social lifestyle in adulthood (Hawkins et al., 1992). The factors identified fall into categories of, community, family, school and peer/individual and include risk factors such as poor discipline, parental attitudes toward drugs, community disorganisation, interaction with anti-social peers, and sensation seeking. In relation to this particular study, we concentrate on the 'school' risk and protective factors which are: Risks - academic failure and low commitment to school; and Protective factors - opportunities for pro-social involvement and rewards for pro-social involvement.

In the present study, all the participants were clear in acknowledging that their 'bond to' or 'connectedness with' the school was strong and that they felt themselves to be strongly a part of the school community. In relation to the risk and protective factor research (Hawkins et al., 1992), it would appear that strategies used in the setting were conducive to the reduction of the young person's low commitment to school. It would also appear that the school setting was assisting the young people to strengthen this bond through providing multiple opportunities and rewards for pro-social involvement thus increasing a protective factor. According to the findings of the longitudinal studies at the Social Development Research Centre:

> *"Increasing bonding to school, by providing students with opportunities to actively participate in their education, the social and emotional skills to participate effectively, and the recognition to enhance motivation to*

> *continue to be engaged in academic pursuits, promotes academic success"* (Catalano et al., 2004, p.163).

It would appear that given the strong proclamation of school connectedness expressed by the participants of the study, research supports the likelihood of academic success (Catalano et al., 2004). Perhaps as mentioned previously the lack of academic progress shown in this study was more reliant on the time frame than other factors. The study did, however, support the findings by Catalano et al. in that the behaviour/s of the young people improved considerably in the school setting and the social competence showed improvement.

Limitations of the Study

The present study was designed to include a variety of methods to improve validity of the findings, however, despite this approach, there are a number of limitations that need to be acknowledged. Firstly, it is acknowledged that the 'label' of ADHD itself is primarily a clinical label and is not to be taken as a definition of an homogenous condition. Without access to information pertaining to the original diagnosis of the participants and with only subjective information of the comorbid conditions of each individual, any findings cannot be generalised to the wider audience of 'young people with ADHD'. For example, two of the young people in the present study had also been diagnosed with an intellectual impairment and it is unknown to what degree this additional impairment impacted on the findings of the study. However, the study did attempt to focus on behaviours and symptoms evident in the young people that were supportive of their diagnosis of ADHD while not necessarily focussing on features of individual comorbid conditions (such as intellectual impairment).

Another limitation of this study is that it occurred in and focussed on one particular setting, a Flexible Learning Centre, and did not include formal measures of the other environments to which the young people belonged (e.g., sporting groups, church groups, social

groups). Of the five participants in the study, only two included parent interviews which provided limited information on whether or not the findings were applicable in other settings. With limited information available on the social and physical environments of the participants outside of the school setting, it is unknown whether demands from these settings (i.e., teamwork, leadership skills development, social skills development) influenced the findings of the study. What did arise in the study though was valuable information on how the features of and approaches used in the school setting influenced the young people and their families, and how they were able to identify these features as conducive to their progress in some areas. Whilst limited to the one setting, this study does draw out some important information for educators interested in how young people view their educational experience and to what factors of this experience they attribute success or progress.

The present study was primarily qualitative, in nature, although supported by quantitative data, and although efforts were made to adhere to the features of qualitative validity such as credibility, transferability, dependability, and confirmability, some limitations occurred within these areas. Firstly, the primary investigator was an active participant in the research setting for a prolonged period of time. Whilst some researchers (Fetterman, 1989) claim that prolonged engagement in a setting gives the qualitative research its "validity and vitality" (p.46), it must also be acknowledged that the researcher brings to the study her own preconceived ideas of the effectiveness of the setting. Although efforts were made during the data collection to clarify and corroborate findings (i.e., the interviews), the choice of observations for inclusion in the study was restricted to the researcher and thus must be acknowledged as being potentially subjective in nature.

Second, transferability and dependability of findings in the study was limited due to the distinct nature of the setting. The concept of alternative education (or flexible learning), while not new, is fraught with unclear definitions and a vast array of differences in practical

interpretation of its intent. Thus, generalisation of any findings from this study becomes reliant on replication of the setting, which, given the importance of embedding the setting in the particular community in which it is located, is difficult to guarantee. By focussing instead on the particular features of pedagogy used in the setting, it was hoped that some transferability could occur.

Finally, in terms of qualitative validity, the issue of confirmability presented limitations. As mentioned previously, the primary researcher was an active, long-term participant in the setting and thus inevitably brought a level of subjectivity to the study. To overcome this limitation, the study was supervised externally and all products and processes were subjected to independent examination. Cresswell and Miller (2000) claimed that this form of external audit can improve the probability of credibility in qualitative research.

Despite the limitations evident in the study, every effort was made to either overcome or acknowledge the limitation/s and thus increase the integrity of the findings. As with all research, the findings of this study are open to interpretation but do appear to offer the field some key recommendations or some pertinent questions for further investigation.

Recommendations for Future Research

One of the findings of key importance in the present study is the lack of academic progress made by the participants over the period of the study. Academic progress is of vital importance to all schools, and especially to schools aiming to cater effectively for young people with ADHD. Although previous research seems to conclude that the behavioural and social difficulties experienced by young people with ADHD are a major factor in preventing academic success, it is important for future research to focus on specific strategies that do lead to academic progress. The instructional practices and curriculum design used in this particular setting, while supported in the research as conducive to academic progress in low-achievers

and young people 'at-risk' (de Jong & Griffiths, 2006; te Riele, 2007), failed to obtain the results expected. Future studies that are designed with particular academic strategies in mind, may shed light on these findings and begin to offer educators specific interventions conducive to academic progress in young people with ADHD. However, it would appear from this and other similar studies that behavioural and social improvements are important prerequisites for successful learning (Purdie et al., 2002) and thus should not be ignored as a key factor when designing interventions to improve academic functioning.

The present study produced important findings in relation to the behavioural and social improvements of the participants. However, it would appear that the improvements in these areas were largely confined to the school setting and did not generalise to other areas of the young person's life. Without the ability to generalise the skills gained in a setting to other areas, the long-term impact of the intervention is reduced and therefore does not prevent the young person from potential negative outcomes. This finding provides a challenge to educators and researchers to ensure that any intervention is designed to include a focus on transferability to other settings. For this particular setting, perhaps the inclusion of an element of 'parent training' (Chronis et. al., 2001; Fabiano & Pelham, 2003) would have led to a transfer of the social and behavioural improvements discovered.

The field of alternative education/flexible learning, although not new in education circles, is fraught with difficulty in relation to providing clear definitions of its purpose and function. Considerable work has begun in attempting to define this broad category of educational facilities (Aron, 2006; Aron & Zweig, 2003; Raywid, 1994), yet future research needs to focus on continuing this work to increase the credibility of research based in these settings. A key to any successful research is the ability to replicate the findings which, given the lack of consistency in the definitions of flexible learning, remains elusive to studies based in alternative education settings. Future research is needed at a global, national and local level

to create a clear typology for alternative education/flexible learning settings that exist. Only then can we confidently produce findings that are replicable and credible.

A major finding from this study was the strong bonds of 'connectedness' to the school experienced by all participants (young people and their parents/carers). Despite this not being a specific focus of the study, the finding offers support for the work of Catalano and Hawkins (1996) and others, and suggests the need for further investigation as to the specific causes of this increased connectedness. Improved school bonding has been found to lead to a reduction of problematic behaviours and an increase in academic success (Catalano et al., 2004) and thus warrants inclusion in any intervention design.

The findings from the present study offer support for the work of others in areas such as school bonding, alternative education/flexible learning, reducing problematic behaviours in young people with ADHD, and increasing social competence in young people with ADHD. The study also provides researchers and educators involved in the field of alternative education/flexible learning an insight into the practices and approaches used in one particular setting and the potential influence they have on the outcomes for young people with ADHD. As this field of educational options continues to grow globally and locally, the present study has important value for researchers in this area and will hopefully contribute to further research on the 'what' and 'how' of alternative education.

Concluding Comments

The present study set out to determine if the strategies and pedagogy used in a particular setting (a Flexible Learning Centre) were conducive to academic, social, and behavioural improvements in young people with ADHD. While the findings were limited by a number of factors such as small sample size, cormorbidity in diagnosis, and unclear definitions

of flexible learning, they are valuable in offering guidance to future research in the areas under investigation.

Findings from the present study indicated that over time, there were improvements in the behavioural and social outcomes for five participants but academic progress was limited. While disappointing, this finding suggests the need for future research to focus on and design academic interventions that may improve academic outcomes for young people with ADHD who attend flexible learning centres. Although some research exists pertaining to academic interventions for young people with ADHD, to date no research has investigated the education of these young people in flexible learning centres/alternative education programs. Given the strong representation in flexible learning of young people with ADHD, it would be of great value to the research field as well as the education sector to identify strategies that would lead to academic improvements for this particular cohort of young people. It is important however to acknowledge that the social and behavioural improvements made by the young people in this study provide support for the approaches used in the setting as well as providing researchers with evidence-based strategies for inclusion in future interventions for this particular cohort of young people.

The 'label' of ADHD does not suggest an homogenous group but what is common to all the young people in this particular study is their failure to connect to any other school setting. These young people had collectively experienced a lack of success in previous school settings and had begun their time at the flexible learning centre disengaged from and disillusioned with learning. They were behind their peers academically, lacking in social friendships and social competence, and isolated from positive community networks. Although not a specific focus of the present study, the strong bonds of connectedness to the school community identified by the participants suggest support for the concept of flexible learning and provide a basis for further research into what aspects of the setting led to this improvement

in school engagement. Engagement and connectedness are important pre-requisites to improvement in any other areas of school/life and thus warrant inclusion in any intervention designed to improve outcomes for young people, in particular young people with ADHD.

Although the present study was focussed on a particular setting (a Flexible Learning Centre) and a particular group of young people (adolescents with ADHD), the findings from the study offer a starting point for future researchers. In particular, this study is of value to those involved in research that is arising out of the growth of alternative education/flexible learning settings in Australia and around the world. While by their very nature (flexible) these settings are unique to each community in which they grow, it is hoped that this study has provided a rich narrative that will allow future researchers to compare settings and practices. In relation to the participants of the present study, one would envisage that the overrepresentation of young people with ADHD in these settings will continue into the future and thus the need to explore the outcomes they experience in flexible learning centres will continue to be of paramount importance. To date, young people with ADHD have limited success in educational settings and if we are to be true to the principles of 'inclusive education' then it is vital we, as researchers and educators, explore alternative pathways to success for this group of young people.

REFERENCES

Abbott, R.D., O'Donnell, J., Hawkins, J.D., Hill, K.G., Kosterman, R., & Catalano, R.F. (1998). Changing teaching practices to promote achievement and bonding to school. *American Journal of Orthopsychiatry, 68(4)*, 542-552.

Anastopoulos, A.D., Shelton, T.L., DuPaul, G.J., & Guevremont, D.C. (1993). Parent training for attention-deficit hyperactivity disorder: Its impact on parent functioning. *Journal of Abnormal Child Psychology*, *21*, 581-596.

Anderson, J.C., Williams, S., McGee, R., & Silva, P.A. (1987). DSM-III disorders in preadolescent children. Prevalence in a large sample from the general population. A*rchives of General Psychiatry*, *44*, 69-76.

Aron, L.Y., & Zweig, J.M. (2003**).** *Educational alternatives for vulnerable youth: Student needs, program types, and research directions.* Washington, DC: The Urban Institute.

Aron, L.Y. (2006). *An overview of alternative education.* Washington, D.C.: The Urban Institute.

American Psychiatric Association. (1980). *Diagnostic and statistical manual of mental disorder*s (3rd ed.). Washington, DC: American Psychiatric Association.

American Psychiatric Association. (2000) *Diagnostic and statistical manual of mental disorders (4th ed.) Text revision*, Washington, DC, American Psychiatric Association.

Anderson, J., Williams, S., McGee, R., & Silva, P. (1987). DSM-III disorders in preadolescent children. Prevalence in a large sample form the general population. *Archives of General Psychiatry, 44*, 69-76.

Australian Bureau of Statistics. (2006). Community Profile Series, Catalogue number 2001.0. Retrieved from http://www.censusdata.abs.gov.au. Viewed on 16th December 2009.

Australian Council for Educational Research. (1969). Test of whole number computation. In *ACER Mathematics Test (AM Series).* Melbourne: ACER Press.

Australian Council for Educational Research. (1979). *ACER Mathematics Test (AM Series) Revised Manual*. Melbourne: ACER Press.

Bandura. A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist, 28*(2). 117-148.

Barkley, R.A. (1989). The problem of stimulus control and rule-governed behaviour in children with attention deficit disorder with hyperactivity. In L.M. Bloomingdale & J.M. Swanson (eds.), *Attention deficit disorder (pp. 203-234)*. New York: Pergamon Press.

Barkley, R. (1990) *Attention deficit hyperactivity disorder: A handbook for diagnosis and treatment.* New York, NY: Guilford Press.

Barkley, R. (1994, April 29). Symposium address. *The Institute of Adult Development and the Institute for Child and Adolescent Wellness* .Beechwood, OH.

Barkley, R. A. (1998a). Attention-deficit hyperactivity disorder. *Scientific American, 279 (3)*, 66-72.

Barkley, R. (1998b)**.** *Attention deficit hyperactivity disorder: A handbook for diagnosis and treatment.* New York, NY: The Guilford Press.

Barkley, R. (2006). *Attention-deficit hyperactivity disorder: A handbook for diagnosis and treatment (3rd ed.).* New York, NY: Guilford Press.

Barkley, R., Fischer, M., Edelbrock, C., & Smallish, L. (1990). The adolescent outcome of hyperactive children diagnosed by research criteria: An 8-year prospective follow-up study. *Journal of the American Academy of Child and Adolescent Psychology*, *29 (4)*, 775-789.

Barry, T., Lyman, R., & Klinger, L. (2002). Academic underachievement and attention-deficit/hyperactivity disorder: The negative impact of symptom severity on school performance. *Journal of School Psychology, 40,* 259-283.

Banaschewski, T., Brandeis, D., Heinrich, H., Albrecht, B., Brunner, E., & Rothenberger, A. (2003). Association of ADHD and conduct disorder: Brain electrical evidence for the existence of a distinct subtype. *Journal of Child Psychology and Psychiatry and Allied Disciplines, 44*, 356-376.

Barry, T.D., Lyman, P.D., & Klinger, L.G. (2002). Academic underachievement and attention-deficit/hyperactivity disorder: The negative impact of symptom severity on school performance. *Journal of School Psychology, 40,* 259-283.

Barton, P. (2005). *One-third of a nation: Rising dropout rates and declining opportunities.* Princeton, NJ: Educational Testing Service, Policy Evaluation and Research Center.

Berbatis, C. Sunderland, V., & Bulsar, M. (2002). Licit psychostimulant consumption in Australia, 1984-2000: International and jurisdictional comparison. *Medical Journal of Australia, 177,* 539-543.

Berk, L.E., & Potts, L.K. (1991). Development and functional significance of private speech among attention-deficit hyperactivity disorder and normal boys. *Journal of Abnormal Child Psychology, 19*, 357-377.

Bickel R., & Campbell A. (2002). Mental health of adolescents in custody: the use of the "Adolescent Psychopathology Scale" in a Tasmanian context. *Australia and New Zealand Journal of Psychiatry, 36*, 603-9.

Biederman, J., Faraone, S., Mick, E., & Lelon, E. (1995). Psychiatric comorbidity among referred juveniles with major depression: Fact or artefact? *Journal of the American Academy of Child and Adolescent Psychiatry*, *34*, 579-590.

Biederman, J., Monuteaux, M., Doyle, A., Seidman, L., Wilens, T., Ferrero, F., Morgan, C., & Faraone, S. (2004). Impact of executive function deficits and attention-deficit/hyperactivity disorder (ADHD) on academic outcomes in children. *Journal of Consulting and Clinical Psychology*, *72 (5),* 757-766.

Blakers, C., & Nicholson, B. (1988). *On the fringe. Second chance education for disadvantaged young people*. Canberra: The Youth Bureau (Department of Education, Employment and Training).

Bowlby, J. (1973). *Attachment and loss: Volume II: Separation, anxiety and anger.* London: The Hogarth Press and the Institute.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3, 77-101.

Carlson, E.A., Jacobvitz, D., & Sroufe, L.A. (1995). A developmental investigation of inattentiveness and hyperactivity. *Child Development, 66,* 37-54.

Cassell, C., & Symon, G. (1994). Qualitative research in work contexts. In Cassell, C. & Symon, G. (eds.), *Qualitative methods in organizational research, a practical guide* (pp.1-13). London: Sage.

Catalano, R., & Hawkins, J. (1996). The social development model: A theory of antisocial behaviour. In: Hawkins, J., *Delinquency and Crime: Current Theories* (pp. 149-197). New York: Cambridge University Press.

Catalano, R., Haggerty, K., Oesterle, S., Fleming, C., & Hawkins, J. (2004). The importance of bonding to school for healthy development: Findings from the Social Development Research Group. *Journal of School Health, 74 (7),* 252-269.

Chronis, A.M., Fabiano, G.A., Gnagy, E.M., Onyango, A.N., Pelham, W.E., & Williams, A. (2001). Comprehensive, sustained behavioural and pharmacological treatment for ADHD: A case study. *Cognitive and Behavioral Practice, 8*, 346-359.

Chronis, A.M., Fabiano, G.A., Gnagy, E.M., Onyango, A.N., Pelham, W.E., … Seymour, K.E. (2004). An evaluation of the summer treatment program for children with attention-deficit/hyperactivity disorder using a treatment withdrawal design. *Behavior Therapy, 35(3),* 561-585.

Chronis, A., Jones, H., & Raggi, V. (2005). Evidence-based psychosocial treatments for children and adolescents with attention-deficit/hyperactivity disorder. *Clinical Psychology Review, 26(4),* 486-502.

Clark, C., Prior, M., & Kinsella, G. (2002). The relationship between executive function abilities, adaptive behaviour, and academic achievement in children with externalising behaviour problems**.** *Journal of Child Psychology and Psychiatry, 43(6),* 785-796.

Cook, E.H., Jr., Stein, M.A., Krasowski, M.D., Cox, N.J., Olkon, D.M., Kieffer, J.E., & Leventhal, B.L. (1995). Association of attention-deficit disorder and the dopamine transporter gene. *American Journal of Human Genetics, 56*. 993-998.

Commonwealth Department of Health and Human Services (1995). *The Health of Young Australians: A National Health Policy for Children and Young People.* Canberra: Australian Government Printing Services.

Commonwealth of Australia. (1992). *Disabilities Discrimination Act 1992.* Canberra, ACT: Commonwealth of Australia.

Cooley, E.L., & Morris, R.D. (1990). Attention in children: A neuropsychologically based model of assessment. *Developmental Neuropsychology, 6,* 239-274.

Connor, D.,F., & Steingard, R.J. (2004). New formulations of stimulants for attention-deficit hyperactivity disorder: Therapeutic potential. *Central Nervous System (CNS) Drugs*, *18(14),* 1011-1030.

Connor, J. (2006). *What's Mainstream? Conventional and unconventional learning in Logan*. Paper presented at the Dusseldorp Skills Forum, Learning Choices Expo. Retrieved from http://www.dsf.org.au//papers.php?th=12.

Connors, C., Epstein, J., March, J., Angold, A., Wells, K., & Klaric, J. et al. (2001). Multimodal treatment of ADHD in the MTA: An alternative outcome analysis. *Journal of the American Academy of Child and Adolescent Psychiatry, 20,* 159-167.

Creswell, J.W. (2005). *Educational research: planning, conducting, and evaluating quantitative and qualitative research*. New Jersey: Pearson Education.

Creswell, J.W., & Miller, D.L. (2000). Determining validity in qualitative inquiry. *Theory into Practice*, *39(3),* 124-130.

Curtis, D., Pisecco, S., Hamilton, R., & Moore, D., (2006). Teacher perceptions of classroom interventions for children with ADHD: A cross-cultural comparison of teachers in the United States and New Zealand. *School Psychology Quarterly, 21(2),* 171-197.

Dailey, E., & Rosenberg, M. (1994). ADD, computers, and learning: Using computers to help children with ADD become efficient learners. *Attention, 1(2),* 8-16.

DeCarvalho, R. (1991). The humanistic paradigm in education. *The Humanistic Psychologist, 19(1),* 88-104.

de Jong, T.A. (2004). *Best practice in addressing student behaviour issues in Australia.* (Report submitted to the Ministerial Council on Education, Employment, Training and Youth Affairs [MCEETYA]). Perth, Western Australia: MCEETYA.

de Jong, T.A., & Griffiths, C. (2006). The Role of Alternative Education Programs in Meeting the Needs of Adolescent Students With Challenging Behaviour: Characteristics of Best Practice. *Australian Journal of Guidance & Counselling*, *16(1),* 29-40.

DeWalt, K., & DeWalt, B. (2002). *Participant observation: A guide for fieldworkers*. Walnut Creek, CA: AltaMira Press.

Dunlap, G., dePerczel, M., Clarke, S., Wilson, D., Wright, S., & White, R. (1994). Choice making to promote adaptive behaviour for students with emotional and behavioural challenges. *Journal of Applied Behavior Analysis*, *27*, 505-518.

DuPaul, G., & Eckert, T. (1998). Academic interventions for students with attention-deficit/hyperactivity disorder: A review of the literature. *Reading and Writing Quarterly, 14,* 59-82.

DuPaul, G.J., & Stoner, G. (1994). *ADHD in schools: Assessment and intervention strategies*, New York, NY: Guilford Press.

Elley, W.B., & Croft, C. (1989). *Assessing the difficulty of reading materials: The noun frequency method. (Revised edition).* Wellington, NZ: Lithoprint.

Erikson, E.H. (1980). *Identity and the life cycle.* New York: Norton.

Ervin, R.A., Bankert, C.L., & DuPaul, G.J. (1996). Treatment of attention-deficit/hyperactivity disorder. In Reinecke, M.A, Dattilio, F.M., & Freeman, A. (Eds.). *Cognitive therapy with children and adolescents: A casebook for clinical practice* (pp. 38-61). New York: Guilford Press.

Evans, S.W., Pelham, W.E., & Grudberg, M.V. (1995). The efficacy of note taking to improve behaviour and comprehension of adolescents with attention-deficit hyperactivity disorder. *Exceptionality*, *5*, 1-17.

Fabiano, G., & Pelham, W. (2003). Improving the effectiveness of behavioural classroom interventions for attention-deficit/hyperactivity disorder: A case study. *Journal of Emotional and Behavioral Disorders, 11,* 122-128

Fetterman, D.M. (1989). *Ethnography: Step by step*. Applied Social Research Methods Series, No.17. Newbury Park, CA: Sage Publications.

Fielding, N.G., & Fielding, J.L., (1986). *Linking Data*. London, U.K.: Sage Publications.

Fiore, T., Becker, E., & Nero, R. (1993). *Research synthesis on education interventions for students with attention deficit disorder.* Washington, DC: United States Department of Education.

Flexible Learning Centres: Occasional Paper. (2005). Indooroopilly, QLD: Edmund Rice Education.

Flick, G.L. (2000). *How to reach and teach teenagers with ADHD*. New York: The Centre for Applied Research in Education.

Fry, E. (1964). Judging readability of books. *Teacher Education, 5*, 34-39.

Gay, L.R. (1996). *Educational research. Competencies for analysis and application. (5th ed.).* New Jersey: Prentice Hall.

Gee, J. (1990). *Social linguistics and literacies: Ideology in discourses (2nd ed.).* New York: Routledge Falmer.

Goodman, R., & Stevenson, J. (1989). A twin study of hyperactivity. The aetiological role of genes, family relationships, and perinatal adversity. *Journal of Child Psychology and Psychiatry*, *30*, 691-709.

Goodman, R. (1997). The Strengths and Difficulties Questionnaire: A Research Note. *Journal of Child Psychology, Psychiatry and Allied Disciplines*, *38 (5),* 581-586.

Graetz, B., Sawyer, M., Hazell, P., Arney, F., & Baghurst, P. (2001). Validity of DSM-IV ADHD Subtypes in a nationally representative sample of Australian children and adolescents. *Journal of American Academy of Child and Adolescent Psychiatry, 4,* 1410-1418.

Gregg, S. (1996). *Policy briefs: Preventing antisocial behaviour in disabled and at-risk students.* Charleston, WV: Appalachian Educational Laboratory.

Hartley, J. (2004). Case study research. In Cassell, C. & Symon, G. (Eds). *Essential guide to qualitative methods in organizational research* (pp. 323-333)**.** London: Sage Publications.

Hawes, D.J., & Dadds, M.R. (2004). Australian data and psychometric properties of the Strengths and Difficulties Questionnaire. *Australian and New Zealand Journal of Psychiatry, 38,* 644-651.

Hawkins, J., Catalano, R., & Miller, J. (1992). Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: implications for substance-abuse prevention. *Psychology Bulletin*, *112 (1),* 64-105.

Hawkins, J., Doueck, H., & Lishner, D. (1988). Changing teaching practices in mainstream classrooms to improve bonding and behavior of low achievers. *American Educational Research Journal*, *25 (1),* 31-50.

Hayes J,, & O'Reilly G. (2007). *Emotional Intelligence, Mental Health and Juvenile Delinquency.* Cork: Juvenile Mental Health Matters.

Hebb, D.O. (1955). Drives and the CNS (conceptual nervous system). *Psychological Review*, *62(4),* 243-254.

Hinshaw, S. (1992). Academic underachievement, attention deficits and aggression: Comobidity and implications for intervention. *Journal of Consulting and Clinical Psychology, 60 (6),* 893-903.

Hinshaw, S.P., & Melnick, S.M. (1995). Peer relationship in boys with attention deficit hyperactivity disorder with and without comorbid aggression. *Development and Psychopathology*, 7, 627-647.

Hinshaw, S., Owens, E., Wells, K., Kraemer, H., Abikoff, H., & Arnold, L., … Wigal, T. (2000). Family processes and treatment outcomes in the MTA: Negative/ineffective parenting practices in relation to multimodal treatment. *Journal of Abnormal Child Psychology, 28,* 555-568.

Hirschi, T. (1969). *Causes of Delinquency*. Berkeley, California: University of California Press.

Hoepfl, M.C., (1997). Choosing qualitative research: A primer for technology education researchers. *Journal of Technology Education, 9(1),* 47-63.

Holdaway, D. (1972). *Independence in reading: A handbook on individualized procedures*. Auckland: Ashton Scholastic.

Holdsworth, R. (2004). *Good practice in learning alternatives*. Paper presented at the Dusseldorp Skills Forum, Learning Choices Expo. Retrieved from http://www.dsf.org.au//papers.php?th=12.

Jick, T.D. (1979). Mixing qualitative and quantitative methods: Triangulation in action. *Administrative Science Quarterly*, *24*, 602-611.

Hubley, A.M., & Zumbo, B.D. (1996). A dialectic on validity: Where we have been and where we are going. *The Journal of General Psychology*, *123*, 207-215.

Kawulich, B. (2005, May). Participant Observation as a Data Collection Method. *Forum: Qualitative Social Research.* 6(2), Art. 43. Retrieved from http://www.qualitative-research.net/fqs-texte/2-05/05-2-43-e.htm.

Kohlbacher, F. (2006). The use of qualitative content analysis in case study research. *Forum: Qualitative Social Research* 7(1). Art. 21. Retrieved from http://www.qualitative-research.net/fqs-teste/1-06/06-1-21-e.htm.

Kohn, A. (1993). *Punished by rewards*. Boston, MA: Houghton Mifflin Company.

Lamb, S. (2009). Effective strategies for improving school completion. *Professional Voice, 7(1),* 23-29.

Legters, N., McDill, E., & McPartland, J. (1994). Rising to the challenge: Emerging strategies for students at risk. In Rossi, R., & Montgomery, A. (Eds.), *Educational reforms and students at risk: A review of the current state of the art* (pp. 47-92). Washington, DC: Office of Research, United States Department of Education.

Leuba, C. (1955). Toward some integration of learning theories: The concept of optimal stimulation. *Psychological Reports, 1*, 27-33.

Lincoln, Y.S., & Guba, E.G. (1985). *Naturalistic inquiry*. Newbury Park, CA: Sage Publications.

Loe, I., & Feldman, H. (2007). Academic and educational outcomes of children with ADHD. *Ambulatory Pediatrics*, *7(1),* 82-91.

Marsh, H. (1990). *Self-Description Questionnaire-II Manual.* Sydney: University of Western Sydney.

Marshall, C., & Rossman, G. (1989). *Designing qualitative research*. Newbury Park, CA: Sage Publications Inc.

Martone, J., DuPaul, G., & Jitendrea, A. (2005). The effects of computer-assisted instruction on the mathematics performance and classroom behaviour of children with ADHD. *Journal of Attention Disorders, 9,* 301-312.

Massetti, G.M., Lahey, B.B., Pelham, W.E., Loney, J., Ehrhardt, A., Lee, S.S., & Kipp, H. (2008). Academic achievement over 8 years among children who met modified criteria for attention-deficit/hyperactivity disorder at 4-6 years of age. *Journal of Abnormal Child Psychology, 36*, 399-410.

Maxwell, J. P. (1998). Designing a qualitative study. In Bickerman, L., and Rog, D.J. (Eds.), *Handbook of Applied Social Research Methods*(pp. 69-100). Thousand Oaks, CA: Sage Publications.

McInerney, M. (1994)**.** *Effective practices for educating children with attention deficit disorder.* Washington, DC: Chesapeake Institute.

Multimodal Treatment Authority Cooperative Group. (1999). A 14-month randomized clinical trial of treatment strategies for attention deficit/hyperactivity disorder. *Archives of General Psychiatry, 56,* 1073-1086.

Murray, D.W., Arnold, L.E., Swanson, J., Wells, K., Burns, K., Jensen, P., … Strauss, T. (2008). A clinical review of outcomes of the multimodal treatment study of children with attention-deficit/hyperactivity disorder (MTA). *Current Psychiatry Report, 10(5),* 424-431.

National Association of State Boards of Education. (1996). Alternative education for students at risk". *Policy Update, 4(8),* Alexandria, VA: Policy Information Clearinghouse.

O'Leary, K., Pelham, W., Rosenbaum, A., & Price, G. (1976). Behavioral treatment o hyperkinetic children: An experimental evaluation of its usefulness. *Clinical Pediatrics, 15,* 510-515.

Ota, K., & DuPaul, G. (2002). Task engagement and mathematics performance in children with attention deficit hyperactivity disorder: Effects of supplemental computer instruction. *School Psychology Quarterly, 17,* 242-257.

Owen, Christine. (2004). Have we got what it takes?: *The skills, rewards and recognition needed for teachers, youth workers and others in Learning Alternatives*. Workshop conducted at the Dusseldorp Skills Forum, Learning Choices Expo. Retrieved from www.dsf.org.au/papers/163.htm .

Parkin, C., Parkin, C., and Pool, B. (2002). *PROBE Reading Assessment.* New Zealand: Triune Initiatives.

Patton, M.Q. (1990). *Qualitative evaluation and research methods* (2nd ed.). Newbury Park, CA: Sage Publications Inc.

Pelham, W.E., & Bender, M.E. (1982). Peer relationships in hyperactive children: Description and treatment. In Gadow, K.D., and Bialer, I. (Eds.), *Advances in Learning and Behavioural Disabilities* (pp. 365-436). Greenwich, CT: JAI Press.

Pelham, W.E., Schendler, R.W., Bender, M.E., Nilsson, D.E., Miller, J., & Budrow, M.S. (1988). The combination of behaviour therapy and methylphenidate in the treatment of attention deficit disorders: A therapy outcome study. In Bloomingdale, L. (Ed.). *Attention deficit disorders III: New research in attention, treatment, and psychopharmacology* (pp. 29-48). London: Pergamon Press.

Pelham, W. (1999). The NIMH multimodal treatment study for attention-deficit hyperactivity disorder: Just say yes to drugs alone? *Canadian Journal of Psychiatry, 44 (10),* 981-990.

Pelligrini, A., & Horvat, M. (1995). A developmental contextualist critique of attention deficit hyperactivity disorder. *Educational Researcher, 24(1),* 13-19.

Purdie, N., Hattie, J., & Carroll, A. (2002). A review of the research on interventions for attention deficit hyperactivity disorder: What works best? *Review of Educational Research*, *72 (1),* 61-99.

Prior, M., Sanson, A., Smart, D., & Oberklaid, F. (2000). *Infancy to adolescence: Australian temperament project 1983-2000*. Melbourne: Australian Institute of Family Studies.

Queensland Department of Education. (2004). *District Youth Achievement Plan for Logan-Beenleigh.* Brisbane: Queensland Government Printery.

Queensland Department of Education. (1989). *Mathematics Syllabus.* Brisbane: Queensland Government Printery.

Queensland Department of Education and the Arts. (2005). *Queensland Curriculum, Assessment and Reporting Framework.* Brisbane, QLD: Strategic Policy and Education Futures.

Queensland School Curriculum Council, 1998. *Queensland Outcomes Framework*. Brisbane: Office of the Queensland School Curriculum Council.

Raggi, V., & Chronis A. (2006). Interventions to address the academic impairment of children and adolescents with ADHD. *Clinical Child and Family Psychology Review, 9*(2), 85-111.

Raywid, M.A. (1994). Alternative schools: The state of the art**.** *Educational Leadership, 52(1),* 26-31.

Robinson, T.R., Smith, S.W., Miller, M.D., & Brownell, M.T. (1999). Cognitive behaviour modification of hyperactivity- impulsivity and aggression: A meta-analysis of school-based studies. *Journal of Educational Psychology*, *91 (2),* 195-203.

Royal Australasian College of Physicians. (2009). Australian guidelines on attention deficit hyperactivity disorder (ADHD). Retrieved from http://www.nhmrc.gov.au/publications/synopses/adhd_draft.htm

Rubinstein. R.A., & Brwon, R.T. (1981). An evaluation of the validity of the diagnostic category of ADD. *American Journal of Orthopsychiatry, 54*, 398-414.

Sawyer, M., Arney, F., Baghurst, P., Clark, J., Graetz, B., Kosky, R., … Zubrick, S.R. (2000). *The mental health of young people in Australia.* Canberra, Australia: Commonwealth Department of Health and Aged Care.

Schloss, P.J., & Smith, M.A. (1994). *Applied behaviour analysis in the classroom*. Boston: Allyn and Bacon.

Shaddock, A.J., Giorcelli, L., & Smith, S. (2007). *Inclusive practice: A user-friendly guide for teachers*. Canberra: Department of Education, Science and Training.

Shaw, G., & Brown, G. (1999). Arousal, time estimation, and time use in attention-disordered children. *Developmental Neuropsychology, 16,* 227-242.

Skinner, B.F. (1953). *Science and human* b*ehaviour*. New York: Macmillan.

Slavin, R.E. (1987). Ability grouping and student achievement. *Review of Educational Research. 57(3),* 293-336.

Smalley, S.L., Bailey, J.N., Palmer, C.G., Cantwell, D.P., McGouch, J.J., Del'Homme, M.A., … Nelson, S.F. (1998). Evidence that the dopamine D4 receptor is a susceptibility gene in attention deficit hyperactivity disorder. *Molecular Psychiatry, 3,* 427-430.

Smith, B.H., Waschbusch, D.A., Willoughby, M.T., & Evans, S. (2000) The efficacy, safety, and practicality of treatments for adolescents with Attention-Deficit/Hyperactivity Disorder. *Clinical Child and Family Psychology Review, 3(4),* 243-266.

Spencer. T., Biederman, J., Wilens, T., Harding, M., O'Donnell, D., & Griffin, S. (1996). Pharmacotherapy of attention-deficit hyperactivity disorder across the life cycle. *Journal of the American Academy of Child and Adolescent Psychiatr*y, *35(4),* 409-432.

Spencer, T., Wilens, T., Biederman, J., Faraone, S., Ablon, J., & Lapey, K. (1995). A double-blind, crossover comparison of methylphenidate and placebo in adults with childhood-onset attention-deficit hyperactivity disorder. *Archives of General Psychiatry, 52,* 434-443.

Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park, CA: Sage Publications.

Stroes, A., Alberts, E., & van der Meere, J.J. (2003). Boys with ADHD in social interaction with non-familiar adult: An observational study. *Journal of the American Academy of Child and Adolescent Psychiatry, 42(3),* 295-302.

Swanson, J., Cantwell, D., Lerner, M., McBurnett, K., & Hanna, G. (1991). Effects of stimulant medication on learning in children with ADHD. *Journal of Learning Disabilities, 24 (4),* 219-230.

Swanson, J., Kraemer, H., Hinshaw, S., Arnold, L., Connors, C., & Abikoff, H. (2001). Clinical relevance of the primary findings of the MTA: Success rates based on severity of ADHD and ODD symptoms at the end of treatment. *Journal of the American Academy of Child and Adolescent Psychiatry 40,* 168-179.

te Riele, K. (2007). Educational alternatives for marginalised youth. *The Australian Educational Researcher, 34 (3),* 53-68.

Unnever, J.D., & Cornell, D.G. (2003). Bullying, self-control, and ADHD. *Journal of Interpersonal Violence*, *18,* 129-147.

Vygotsky, L.S. (1978). *Mind and society: The development of higher mental processes.* Cambridge, MA: Harvard University Press.

Weaver, C. (1992). *Understanding and educating attention deficit hyperactive children.* Kalamazoo, MI: Western Michigan University, Department of English.

Werner, E., & Smith, R. (1992). *Overcoming the odds: High-risk children from birth to adulthood.* Ithaca, NY: Cornell/University Press.

Westwood, P. (2004). *Spelling approaches to teaching and assessment*. Camberwell, Victoria: Australian Council for Educational Research.

Wilens, T.E., Biederman. J., Brown, S., Tanguay, S., Monuteaux, M. C., Blake, C., & Spencer, J.W. (2002). Psychiatric comorbidity and functioning in clinically-referred preschool children and school-age youth with ADHD. *Journal of the American Academy of Child and Adolescent Psychiatry, 41,* 262-268.

Yin, R.K. (2003). *Case study research, design and methods* (3rd ed.). Thousand Oaks, CA: Sage Publications Inc.

Zatmetkin, A., & Liotta, W. (1998). The neurobiology of attention-deficit/hyperactivity disorder. *Journal of Clinical Psychiatry*, *59,* 17-23.

Zentall, S.S., & Zentall, T.R. (1983). Optimal stimulation: A model of disordered activity and performance in normal and deviant children. *Psychological Bulletin*, *94*, 446-471.

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

Zentall, S. (2005). Theory- and Evidence-Based Strategies for Children with Attentional Problems. *Psychology in Schools*, 42(8), 821-836.

Appendix 1

Ethical Clearance from The University of Queensland

THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

The School of Education

22nd January 2010

Ms Linda Houston
MPhil Candidate
School of Education

S/N: 38656485

Ethical Clearance Number: 06-99

Dear Linda,

I am pleased to confirm that ethical clearance was granted for your project "Comparison of Outcomes (academic, social, functional, behavioural) for young people with and without the presence of Attention Deficit Hyperactivity Disorder".

I would also like to remind you that any correspondence associated with your project (consent forms, information sheets etc.) must be printed on official UQ letterhead (available from the School of Education Enquiries Office).

If you have any questions regarding this matter please do not hesitate to contact me.

I wish you well with your studies.

Yours sincerely,

Michelle Weston
Senior Administrative Officer
(Postgraduate & Higher Degrees)

Level 4
Social Sciences Building (24)
The University of Queensland
Brisbane QLD 4072 Australia
T +61 7 3365 6561
F +61 7 3365 7199
education@uq.edu.au
www.uq.edu.au/education

Appendix 2

Gatekeeper Permission from Christian Brothers, Xavier Province

Edmund Rice Education

Education for Liberation

Educating the Minds and Hearts of the Young

14 March 2006

Ms Linda Houston
Centre Education Programme
PO Box 4
Woodridge 4114

Dear Linda

I refer to your letter of 14 March, 2006 regarding approval to conduct research in Catholic Schools in the Edmund Rice tradition. The title of the research is *"Comparison of Outcomes (Educational, Social, Functional and Behavioural) for Young People With and Without Presence of Attention Deficit Hyperactivity Disorder (ADHD)"*. Approval is hereby granted to conduct the research as outlined in the pro forma.

We wish you all the best with your research and are looking forward to seeing the results.

With best wishes

Yours sincerely

Bill

Bill Sultmann
Executive Director

Christian Brothers
St Francis Xavier Province Centre - 70 Kate Street, Indooroopilly Qld 4068
PO Box 923, Indooroopilly Qld 4068
Telephone: +61 7 3327 2200 Facsimile: +61 7 3327 2255 Web: www.erdonald.org.au Email: ...@erdonald.org.au

Appendix 3

Parent/Carer Introduction Letter and Consent Form
Student Introduction Letter and Consent Form

THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

School of Education

The University of Queensland
Brisbane Qld 4072 Australia
Telephone +61 7 3365 6552
Facsimile +61 7 3365 7199
Internet www.uq.edu.au/education

12th June 2006

Dear Parents/Carers,

My name is Linda Houston and I am a teacher at Centre Education Programme (CEP). This year I have begun a Masters of Philosophy degree program in the School of Education at the University of Queensland under the supervision of Associate Professor Ian Hay, the name of my project is - *an investigation of outcomes for young people with and without Attention Deficit Hyperactivity Disorder - ADHD*.

I plan to review whether or not the current level of interventions used at Centre Education Programme are sufficient to overcome the difficulties associated with Attention Deficit Hyperactivity Disorder (ADHD). To do so I am investigating the outcomes (educational, social and behavioural) of students with the condition and those that do not have ADHD. I believe that the findings from this project will be of assistance to staff at CEP as well as the wider educational community in evaluating the effectiveness of our current intervention practices.

To gain the background information on students with and without ADHD parents and students at CEP will be asked to complete three basic questionnaires that relate to the students' behaviour and social interactions. There are no right or wrong answers with the survey questions and it should take about 50 minutes to complete all of the basic questions. The interviews will be conducted either, at CEP or if need be, in the home and by Linda Houston. Parents and students will be asked to re-complete the same questionnaires in 2007. Additional data will be gathered from testing that young people complete yearly at CEP.

All information gained from the three questionnaires will be treated in the strictest of confidence and all records stored in a secure location. Further, should you volunteer to participate, but then wish to withdraw, you may do so at any time without prejudice. No names of any child or parent will be used in any publication associated with this study. You can

request access to any information gathered on your child associated with this project and be given feedback at any time by Linda Houston.

This study has been cleared by one of the human ethics committees of the University of Queensland in accordance with the National Health and Medical Research Council's guidelines. You are of course, free to discuss your participation in this study with Linda Houston, the researcher, contactable on 38086800. If you would like to speak to an officer of the University not involved in the study, you may contact the School of Education Ethics Officer on 3365 6500.

Thanking you for your co-operation.

Linda Houston
Teacher Centre Education Programme
Postgraduate student in M.Phil program
The University Queensland

Associate Professor Ian Hay
School of Education
The University of Queensland
St Lucia, Qld 4072

THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

School of Education

The University of Queensland
Brisbane Qld 4072 Australia
Telephone +61 7 3365 3552
Facsimile +61 7 3365 7199
Internet www.uq.edu.au/education

Parents/Carers consent form

I have read the accompanying letter explaining the project called, *an investigation of outcomes for young people with and without Attention Deficit Hyperactivity Disorder – ADHD,* that is being conducted by Linda Houston and supervised by Associate Professor Ian Hay from the University of Queensland.

I understand that:

- the parent and student questionnaires will be conducted either at CEP or, if need be in the home and by Linda Houston and the same questions will be asked again in 2007,
- academic testing data will be obtained from tests that young people complete as part of their enrolment at CEP,
- participation is voluntary and that I and or my child can withdraw from the study at any time without prejudice,
- questionnaire responses will be anonymous and confidential and take about 50 minutes to complete,
- no names will be used in any results or publications arising from the study, and that all information collected will be treated in strict confidence,
- I can have access to the information gathered on my child in association with this project,
- I can call Linda Houston on 38086800 and request information about the project,
- I can speak to an officer of the University not involved in the study, by contacting the School of Education Ethics Officer on 3365 6500.

I _____agree for my-self and my child _____to participate in the research project outlined above and being conducted by Linda Houston under the supervision of Associate Professor Ian Hay from the University of Queensland.

Name: ……..

Signature: …….. Date: ……..

THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

School of Education

The University of Queensland
Brisbane Qld 4072 Australia
Telephone +61 7 3365 6552
Facsimile +61 7 3365 7199
Internet www.uq.edu.au/education

12th June 2006

Dear Student,

My name is Linda Houston and I am a teacher at Centre Education Programme (CEP). This year I have begun a Masters of Philosophy degree program in the School of Education at the University of Queensland under the supervision of Associate Professor Ian Hay, the name of my project is - *an investigation of outcomes for young people with and without Attention Deficit Hyperactivity Disorder - ADHD*.

I would like to look at whether the teaching and learning activities that you participate in at Centre Education Programme are enough to overcome the difficulties associated with Attention Deficit Hyperactivity Disorder (ADHD). To do so I am going to have a look at the outcomes (educational, social and behavioural) of young people with the ADHD and those that do not have ADHD. I believe that the findings from this project will help staff and other to make sure that young people are learning in the best possible way.

To help make this happen parents and students at CEP will be asked to complete three basic questionnaires that relate to the students' behaviour and social interactions. There are no right or wrong answers with the survey questions and it should take about 50 minutes to complete all of the basic questions. The interviews will be conducted either, at CEP or if need be, in the home and by Linda Houston. Parents and students will be asked to re-complete the same questionnaires in 2007. Additional information will be gathered from testing that young people complete yearly at CEP.

All information gained from the three questionnaires will be treated in the strictest of confidence and all records stored in a secure location. Further, should you volunteer to participate, but then wish to withdraw, you may do so at any time without prejudice. No names of any child or parent will be used in any publication associated with this study. You can

request access to any information gathered associated with this project and be given feedback at any time by Linda Houston.

This study has been cleared by one of the human ethics committees of the University of Queensland in accordance with the National Health and Medical Research Council's guidelines. You are of course, free to discuss your participation in this study with Linda Houston, the researcher, contactable on 38086800. If you would like to speak to an officer of the University not involved in the study, you may contact the School of Education Ethics Officer on 3365 6500.

Thanking you for your co-operation.

Linda Houston
Teacher Centre Education Programme
Postgraduate student in M.Phil program
The University Queensland

Associate Professor Ian Hay
School of Education
The University of Queensland
St Lucia, Qld 4072

THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

School of Education

The University of Queensland
Brisbane Qld 4072 Australia
Telephone +61 7 3365 6552
Facsimile +61 7 3365 7199
Internet www.uq.edu.au/education

Student consent form

I have read the accompanying letter explaining the project called, *an investigation of outcomes for young people with and without Attention Deficit Hyperactivity Disorder – ADHD,* that is being conducted by Linda Houston and supervised by Associate Professor Ian Hay from the University of Queensland.

I understand that:

- the parent and student questionnaires will be conducted either at CEP or, if need be in the home and by Linda Houston and the same questions will be asked again in 2007,
- academic testing data will be obtained from tests that I complete as part of my enrolment at CEP,
- participation is voluntary and that I can withdraw from the study at any time without prejudice,
- questionnaire responses will be anonymous and confidential and take about 50 minutes to complete,
- no names will be used in any results or publications arising from the study, and that all information collected will be treated in strict confidence,
- I can have access to the information in association with this project,
- I can call Linda Houston on 38086800 and request information about the project,
- I can speak to an officer of the University not involved in the study, by contacting the School of Education Ethics Officer on 3365 6500.

I _____agree for my-self to participate in the research project outlined above and being conducted by Linda Houston under the supervision of Associate Professor Ian Hay from the University of Queensland.

Name: ……..

Signature: …….. Date: ……..

Appendix 4

Interview Questions for Young People

Interview Questions- for young people

- Tell me a little bit about what school was like for you before you came to Centre Education?
  Prompt to explore factors such as;
  - How did you get on with your school work? What was your work like?
  - Did you go to school on a regular basis? Why? Why not?
  - How did you feel going to school? Were you happy at school? Why? Why not?
  - Did you know about your ADHD when you were going to school?
  - What problems did your ADHD cause you at school?
  - How did you get on with teachers?
  - How about your friends at school? Did you have some? What were they like?
  - Did you feel like part of the school community? Tell me more. In what ways did or didn't you feel like part of the school community?
  - Did you have any plans for the future when you were at your old school? If yes, what were they? If not, why not?
- What is school like for you now that you are here at Centre Education Programme?
  Prompt to explore factors such as;
  - How do you get on with your school work now? What is your work like?
  - Do you come to school on a regular basis? Why? Why not?
  - How do you feel going to school? Are you happy coming to school? Why? Why not?
  - Did you know about your ADHD when you started coming to Centre Ed?
  - What problems does your ADHD cause you at school?
  - How do you get on with your teachers here at Centre Ed?
  - How about your friends here at Centre Ed? Do you have some? What are they like?
  - Do you feel like part of the school community here? Tell me more. In what ways do or don't you feel like part of the school community?
  - Do you have any plans for the future now that you are here at Centre Ed? If yes, what are they? If not, why not?
- What do you see as different between your last school and CEP?
  Prompt to explore factors such as;
  - Curriculum
  - Teaching approaches
  - School community
- Do you think you have changed much during your time at CEP? If so, in what way?
  Prompt to explore factors such as;
  - Behaviour
  - Learning
  - Futures orientation
  - Attribution of success/failure
  - Coping mechanisms
  - Peers/social connections/friendships
- Does having ADHD cause you many problems? What are they?
  Explore issues that have improved over time in this area and to what the young person attributes these changes.
- What do you see as your remaining challenges?

Appendix 5

Interview Questions for Parents/Carers

Interview Questions- for parents/carers

- Can you tell me what things were like in relation to school for _____ before he/she came here?

  Prompt to explore things such as;
  - Was he/she having problems with school work? Can you tell me more?
  - What was his/her attendance like?
  - Was he/she happy at school?
  - Did he/she know about his/her ADHD and what problems did it cause him/her in school?
  - Did he/she get on with teachers at the school?
  - Did he/she have many friends? What were they like?
  - Did you all feel like part of the school community? In what way?
  - Did he/she have any plans for the future? Do you know what they were?
- What do you think school is like for _____ here?

  Prompt to explore things such as;
  - Is he/she having problems with school work? Can you tell me more?
  - What is his/her attendance like?
  - Is he/she happy at Centre Ed? What makes you think this?
  - Does he/she know about his/her ADHD and what problems does it continue to cause him/her at Centre Ed?
  - Does he/she get on with teachers at this school?
  - Doe he/she have many friends? What are they like?
  - Do you all feel like part of the school community? In what way?
  - Does he/she have any plans for the future? Do you know what they are?
- What do you see as different between _____'s last school and CEP?

  Prompt to explore things such as;
  - Curriculum
  - Teaching approaches
  - School community
- Do you think _____ has changed much during his/her time at CEP? If so, in what way?

  Prompt to explore things such as;
  - Behaviour
  - Learning
  - Futures orientation
  - Attribution of success/failure
  - Coping mechanisms
  - Peers/social connections/friendships
- Does _____ having ADHD cause you many problems at home? What are they?

  Explore things that have improved over time in this area and to what the young person attributes those changes.
- What do you see as _____'s remaining challenges?

Is there anything else you would like to comment on?