THE IMPORTANCE OF FAILING WELL

An exploration of the relationship between resilience and academic achievement

ABSTRACT

Across any group of gifted students in any school there will always be a range of academic and other achievements. It is when these achievements are compared with measures of potential and the expectations of teachers and parents that a gifted child can sometimes be declared an underachiever. The 37 gifted students taking part in this study ranged in academic achievement from high achievers to underachievers. In part one of the study a questionnaire approach was used to measure their locus of control (LOC) and learned helplessness (LH) orientations and their tendency towards resilience or vulnerability. These students were also assessed as to their choice of performance or learning goals; effort or ability attributions for success; and the fixed or flexible nature of intelligence. The results of these investigations were then compared with the expectations of their teachers and their academic performance in recent examinations. None of the factors were found to yield consistent correlation with either expectations or academic achievements. Both high achievers and underachievers were found at all measures of all variables. In part two, a phenomenographic enquiry was undertaken by interview, to investigate the students' reactions to the twin phenomena of success and failure. LOC, LH and resilience/vulnerability were controlled for in this part of the study and the sample group chosen for interview (10 students) included both high achievers and underachievers. Analysis of the interview transcripts revealed one characteristic which consistently differentiated between the underachievers and the high achievers. This was the reaction to failure. Consistently across the sample, irrespective of their LOC, LH and resilience orientations, the students achieving at the highest level were found to display an efficacious, learn-from-mistakes attitude to failure and the underachieving students displayed unhelpful reactions to failure ranging from denial to avoidance to helplessness. The terms *failing well* and *failing badly* were used to describe these two clusters of reactions. Learning to fail well, is proposed as one mechanism to help gifted underachievers improve their academic performance. This study adds to existing understandings in that its findings are contrary to much published literature and its conclusions appears to provide a new perspective on the characteristics of the gifted underachiever.

Table of Contents

List of Figures

List of Tables

CHAPTER ONE
Introduction

1.0 Introduction

This study is designed to assist in broadening the understanding of gifted underachievement.

Across any group of gifted students in any school there will always be a range of academic and other achievements. It is when these achievements are compared with the well founded expectations of teachers and parents that a gifted child can sometimes be declared an underachiever. The school chosen for this study was Hamilton College (name changed to ensure anonymity). This secondary school is located in Hamilton, New Zealand, with approximately 1500 students and 100 staff, and has an ethnic composition of 58% European/Pakeha, 21% Asian, 11% Māori and 10% Pacific Island students. Selection for the gifted and talented group at this school involves a mixture of self nomination plus nomination from parents and teachers based on a series of academic challenges. Academic expectations are very clear for these students and, as I am sure is the case in many schools, the students picked out for the gifted group are expected to achieve some of the best academic grades in the school. During the course of this study all the students sat their 2007 end-of-year examinations and while some fulfilled expectations by performing at the very highest academic level, others in this gifted group performed at only an *average* level. Within the group, these students were considered to be underachieving. These were the students I was particularly interested in studying.

My background is in food technology and it was in my first teaching job as a food science tutor that I began to notice the large variation of performance in assessment situations of seemingly similar students. At first I attributed this performance disparity to differences in motivation or innate intelligence, but in discussion with the students about their study habits, I discovered that many of them had no idea of how to study effectively at the level they were working at. I formulated and taught

them a few simple study skills, and their performance improved. That idea became the basis of my business (The Art of Learning Ltd) and in the last 14 years, myself and my other presenters have taught our particular brand of learning techniques to over 120,000 secondary students, world wide. Over the years the study skills emphasis of our work has been complemented by an equal emphasis on the development of resilience. In my 24 years of teaching I have consistently found that the quality of resilience, or the ability to cope with difficulties, setbacks and failures, when coupled with reasonable intelligence and good learning skills, enables students to achieve consistently at the highest academic levels. I have observed this connection between resilience and academic achievement to be most pronounced amongst gifted students.

The issues faced by many gifted children associated with their heightened intensities and sensitivities are well documented. Much research evidence exists to support both the proposition that gifted children are more vulnerable than the non-gifted, and that they are more resilient. As a teacher, it has been my privilege to teach many gifted children over the years and I have always found some that fit each description. I have worked with some gifted students for whom giftedness is a great advantage. These are the students who are first academically, socially, artistically, in sports and sometimes in anything they turn their hand to. These students seem to live charmed lives and often go on to great and satisfying careers. I have also worked with gifted students for whom their giftedness appears to be a considerable disadvantage. These are the students who report difficulties at school, including not being able to find other students to relate to, not fitting in, being bullied by other students and being picked on by teachers. They often report being bored and frustrated with the slow pace of learning or the lack of academic challenge and can sometimes develop behavioural problems in the conventional classroom. For me, these students are the most interesting to study. My work for the last few years has been focused on developing ways to teach what I call the vulnerable gifted, how to become more resilient.

The connection between resilience (often called educational resilience) and academic achievement is well established. In my experience, I have found that if a student can learn to become more resilient, then usually their academic performance improves too. To assist with this process I have developed a simple diagnostic model of resilience known as Gnostates. This model uses two measures, one of Locus of Control (LOC) and one of Learned Helplessness (LH), to give an estimate of an individual's resilience or vulnerability. I have used this diagnostic tool with many students, and it is my experience that those who manifest as more resilient achieve better academic performance than those who are found to be more vulnerable. Up to the inception of this study I had only investigated this pattern with non-gifted secondary students. The next step was to attempt to discover whether a similar relationship existed between resilience and academic achievement in gifted students.

Part 1 of this study involved using a questionnaire approach to determine the coordinates of LOC and LH for each student which were then used as the coordinates to determine their position on the Gnostates grid. Comparing Gnostates data and actual examination performance then enabled any relationship between orientations towards resilience or vulnerability and academic achievement to be ascertained. Combining students' positions on the Gnostates grid with their performance in examinations also provided the basis for selection of students for Part 2; the interview phase. A sub-group of 10 students was selected for the interview. They were chosen to represent the full distribution within the group of orientations towards resilience and vulnerability, and also included both high academic achievers and underachievers. Part 2 involved a more phenomenographic enquiry into responses to the twin phenomena of success and failure. Interviews using set questions were employed to gather responses that were then analysed for similarities and differences between high achieving and underachieving gifted students. All facets of resilience were explored for demonstrable links to academic achievement, and patterns were identified.

This study examines the evidence in support of gifted vulnerability and gifted resilience. It investigates the connections between LOC and LH and resilience both in the general and the gifted populations and explores in some detail the basis and manifestation of gifted underachievement. The evidence gathered in Part 1 and 2 of the study is presented and emerging patterns are identified. Conclusions are drawn and an attempt is made to fully answer the research question; "Are differences in the academic achievement of gifted students related to differences in resilience orientations?"

CHAPTER TWO

Literature Review

2.0 Introduction

This chapter reviews existing academic literature related to the development and manifestation of resilience and vulnerability. Of particular interest are studies of school students, especially those students classified as gifted and/or talented, and any evidence of links between resilience or vulnerability and academic success. Definitions of giftedness are examined, and the question of whether the gifted population as a whole exhibits more or less vulnerability than the general population is explored. Studies of resilience development in both the general and the gifted populations are reviewed with a focus on similarities and differences. This leads to a discussion of both Locus of Control and Learned Helplessness theories and their common diagnostic base; the analysis of attributions. The significance of this type of analysis is discussed and, in the last section, related to the understanding of achievement and underachievement in gifted students.

2.1 Gifted and Talented

Internationally, the definition of giftedness has changed over time from its beginnings as "a rather narrow concept based on intelligence and the IQ, it has increasingly developed into a multi-category concept based on a wide range of abilities" (McAlpine, 2004, p 33). Within the New Zealand context, this contemporary approach is reflected in the interpretation of giftedness in the New Zealand Ministry of Education handbook for schools, *Gifted & talented: Meeting their needs in New Zealand schools* (2003). In this publication no precise definition is offered, and it instead supports the view that "each gifted and talented student is unique, with his or her own set of behaviours and characteristics" (p. 25).

The term *gifted* was used by both Terman (1925) and Hollingworth (1926) in their classic studies to describe a child of high intelligence quotient (IQ). Similarly within New Zealand, Parkyn (1948) described the gifted as *children of high intelligence*. It

was the 70's publication of the Marland Report (Marland, 1972) which developed the idea of *gifted and talented* children while making little distinction between the gifted and the talented. The gifted and talented were defined as those with demonstrated achievement or potential ability in:

- General intellectual aptitude
- Specific academic aptitude
- Creative and productive thinking
- Leadership ability
- Visual and performing arts
- Psychomotor ability

This report acknowledged a much broader field of activity in which this attribute could be found, but still focused very much on high measurable performance as the key indicator of the presence of giftedness or talent.

Within these definitions the motivation to perform is implied but not specified. One of the first to bring a motivational aspect into the definition of giftedness was Renzulli (1977). His three ring model included the trait of *task commitment* with *above average ability* and *creativity* to make up the Enrichment Triad that he saw as necessary for creative or productive accomplishment. Although specified as a definition of giftedness, Renzulli's explanation of his model focused much more on the development of gifted behaviour than on the identification of giftedness. He declared that "Individuals capable of developing gifted behaviour are those possessing or capable of developing this composite set of traits and applying them to any potentially valuable area of human performance" (Renzulli & Reis 1986, p. 218).

Gagne (1985) also included a motivational element into his definition of giftedness by separating out *gifts* from *talents*. He saw gifts as being natural abilities or skills and talents as being achievements produced through the application of effort to aptitude. He believed that talents were mediated by both intrapersonal and environmental catalysts, including motivation, volition and personality. In a similar

vein both Feldhusen (1986) and Clinkenbeard (1989) considered motivation towards achievement to be an important factor in the manifestation of giftedness. Similarly Sternberg and Lubart's (1993) Multi-variate Theory of Creative Giftedness described motivation as one of the six key resources for the development of giftedness. Following on from this, Sternberg (2002) created the Developing Expertise Model of Intelligence in which he defined giftedness in terms of *expertise*. In this motivation-centred model he maintained that "the main constraint in achieving expertise is not some fixed prior level of capacity but purposeful engagement, involving direct instruction, active participation, role modelling and reward" (2002, p. 5).

In the New Zealand Ministry of Education guidelines for schools there is a distinction made between *potential* performance and *demonstrated* performance and motivational factors are seen as important elements in distinguishing between the two. Some of the characteristics of high performing G-T [1] students are seen as:

- striving for high standards of personal achievement
- self-direction
- high self-motivation
- setting personal goals
- persistence in seeing tasks to completion
- commitment to and absorption in tasks
- self-criticism and self-evaluation
- reliability
- preferring to work independently

(Ministry of Education, 2003).

These characteristics, however, are not seen as being necessary for a student to be identified as G-T, and it is seen as the teacher's responsibility to "…recognise potential as well as demonstrated performance" and to …"offer rich and challenging experiences to help realise potential" (Ministry of Education, 2003). Within the

[1] In text from this point the symbol G-T will denote gifted and talented

New Zealand context it is possible for students who appear to have potential or great natural talent to be identified as G-T, even when lacking self-motivation, determination, persistence or academic resilience. This means that they may then perform academically at well below their potential. Under Gagne's (1985) definition these students would be gifted but not talented, but in the NZ situation they could manifest as gifted underachievers and an understanding of their motivation, volition and personality (ibid.) may help turn their underachievement into achievement.

The characteristics of academically successful gifted students have been shown to be autonomy, an internal Locus of Control (LOC) and positive attributions for success and failure (Olszewski-Kubilius, Kulieke & Krasney, 1988), as well as high intrinsic motivation for reading, thinking and solitude (Csikszentmihalyi, Rathunde & Whalen (1993), and greater confidence in their control over success and failure in school tasks (Chan 1996). Compared to their non-gifted peers, they have been found to perceive themselves as being more competent and more intrinsically motivated (Vallerand, Gagne, Senecal & Pelletier, 1994), with greater intellectual curiosity and academic interest, and to prefer more challenge seeking behaviour and independent mastery (Gottfried, Gottfried, Bathurst & Guerin, 1994).

In contrast, academically less successful (underachieving) gifted students have been shown to demonstrate characteristics including "low self-esteem, perfectionism, procrastination, self-criticism, a feeling of competition where none exists, and an unwillingness to take risks" (Fehrenbach, 1993, p. 88); as well as "disorganisation, a lack of concentration, perfectionism, low self-esteem, unwillingness to conform, anxiety, vulnerability to peer pressure, and an external locus of control" (Ford, 1993, p. 78).

This dichotomous behaviour towards achievement in gifted children has been noted in numerous literature reviews including Bland and Sowa (1994) who found "no consensus in the literature on the social and emotional development of gifted children"(p.79). They found some studies which concluded that gifted children were

more prone to specific adjustment difficulties and feelings of isolation, loneliness and anxiety, and others which found that they were less prone to "depression, withdrawal, psychosis and hyperactivity" than the general population (p. 79). Neihart (1999) also concluded that there was good evidence to support two contrasting views about the psychological well-being of gifted children; "that giftedness enhances resiliency in individuals and that giftedness enhances vulnerability" (p.10). Keiley (2002) found similar results from a more recent meta-study, observing that:

> Some studies suggest that these children are highly motivated, well adjusted, socially mature, open to new experiences, independent, and possess high self-concepts and a high tolerance for ambiguity. Other studies suggest that gifted children may be vulnerable to social and emotional difficulties related to their giftedness. (p. 43)

One focus of this study will be the apparent polarity of resilient and vulnerable states of psychological well-being within the gifted population.

2.2 Vulnerability

One of the first to link what we might think of as vulnerability with giftedness was Dabrowski in his (1964) Theory of Positive Disintegration as explained by O'Connor (2002). In this model, developed from his clinical work with gifted individuals, Dabrowski defined a hierarchy of five levels of personality and emotional development. He believed that an inner conflict between *what is* and *what could be* brought about the *positive disintegration* process, and set the individual on a developmental journey from *Primary Integration* or egocentricity to *Secondary Integration* or altruism. Each higher level on the path to altruism could only be achieved by breaking down the lower level cognitive-emotional structures. Dabrowski observed this positive disintegration process to be a common characteristic of gifted and creative individuals, torn between their own internal value structure and the demands and expectations of others. The ability to move

from a lower level to a higher level of development depended on what Dabrowski called the five *overexcitabilities*, which were both a characteristic and a measure of giftedness. He determined the five overexcitabilities to be psychomotor, sensual, imaginational, intellectual and emotional. Piechowski and Colangelo (1984) in a study comparing gifted students, gifted adults and non-gifted adults showed that elevated overexcitability scores clearly distinguished the gifted participants from the non-gifted.

In 1992, Lovecky also found "heightened sensitivity, emotional intensity and reactivity, feeling different, perfectionism and uneven development of intellectual and emotional areas" (p. 18) to be common social/emotional traits of gifted children. Silverman (1994) described the four key aspects of the emotional complexity of the gifted as "sensitivity, perfectionism, intensity and introversion" (p. 110). More recently Fornia and Frame (2001) suggested that some of the common internal characteristics of gifted children that may lead to emotional difficulties include "high sensitivity, high intensity and existential angst" (p. 385).

These and other commentators paint a picture of a gifted individual as one suffering a constant values conflict with their environment, expressing themselves in exaggerated and inappropriate ways and experiencing every feeling at an extreme intensity. However, the empirical evidence for the heightened vulnerability of G-T students is somewhat mixed.

Gallucci (1988) was one of the first to compare the psychological stability of gifted children with their non-gifted peers using the Children's Behavior Checklist (CBCL). In evaluating 90 G-T students on a summer enrichment programme, he found that their results fell within the normal limits for adjustment of children in general and even the children with IQs above 150 showed no greater levels of psychopathology than the norm. As Gallucci noted however, the result obtained may have been biased by the process used to select students for such programmes which tends to select against those with emotional or behavioural problems.

In 1993 Hoge and Renzulli performed a meta-analysis of 15 different studies that each compared the self concept of gifted students in Grade 7- 10. They found that gifted students had a more positive academic and behavioural self-concept than their more average peers, but a similar level of sociability. The evidence for greater psychological resilience and stability of the gifted was reinforced by a longitudinal study of gifted students from childhood to early adolescence by Gottfried & Gottfried (1996). These researchers found the gifted students to have more positive academic self concepts than average ability students, and to perceive themselves as more academically efficacious, more curious, more interested and more challenge seeking. Howard-Hamilton and Franks (1995), in a study of 167 gifted high school seniors from the North Eastern United States of America, found that the students scored above the normative mean score on the Rasmussen Ego Identity scale, and concluded that the students were successfully coping with adolescent growth and development. These students were on a one month residential summer school for G-T students and although well representative of ethnic minorities (55% non-White), had been identified by their school counsellors on the basis of exemplary school performance which may well have biased the sample against emotional instability.

Lea-Wood and Clunies-Ross (1995) assessed the self esteem of 81 gifted and 77 nongifted adolescent Australian girls, and found that the non-gifted girls were higher in both total and social self-esteem at each year level (Years 7, 8 & 9) than their gifted age cohorts. A different result was obtained more recently in a study of 65 gifted secondary students who exhibited no significant differences from the non-gifted students in terms of self-esteem, hopefulness or attitudes towards education (Vialle, Heaven & Ciarrochi, 2007). Interestingly, the study also revealed that while teachers rated the gifted students as being well adjusted and less likely to have behavioural or emotional problems than non-gifted students, the gifted students themselves reported feeling more sad and less satisfied with their situation than their non-gifted peers.

In a study of 8000 Californian high school students, Brown and Steinberg (1990) showed that many amongst the high achievers actively denied their intelligence in public in order to avoid being labelled as *geeks* or *nerds* and less than 10% were willing to be identified as gifted. Eighty percent of exceptionally gifted Australian students reported intense social isolation in the regular classroom (Gross, 1993), and Rimm (2002) found that social acceptance was a much greater problem for students with unusually high intelligence than for average students. A lack of social acceptance may be due to what Robinson (2002) explains as a type of affect asynchrony of the gifted. "Affect regulation in gifted children is often (but not always) *more* mature than expected for their chronological age but *less* mature than the child's mental or intellectual age"(p. xv). Caught in this situation a gifted child could feel emotionally out of synch with both groups: too mature for their physical age group, not mature enough for their mental age group, and not accepted by either.

Although no consensus appears to have been reached as to the emotional resilience, stability or vulnerability of the whole G-T population, specific cases of heightened vulnerability have been found which appear to be correlated with the particular nature of giftedness. Robinson (2002) highlighted a special risk for bipolar mood disorders in those with high creative ability in writing and in the visual arts, and Neihart (1999), attributed a significantly greater rate of depression and suicide to the same group. Both made the point, however, that gifted writers and visual artists were a unique group and the findings of increased vulnerability could not be generalised across the whole G-T population. Neihart (1999) also made the point that neither the literature nor empirical evidence available "supported a correlation between high IQ and depression among children and adolescents" (p.14), and that when looking at the whole of this special population, gifted students exhibited levels of depression similar to or lower than their nongifted peers. In terms of contemplated or attempted suicide, both Gust-Brey, Karyn and Cross (1999) and Cross, Cassady and Miller (2006) found no significant research evidence of higher rates among gifted than among nongifted adolescents.

Although there is very little evidence of any increased vulnerability of the G-T population as a whole, they are seen to be subject to particular risks related to their giftedness. Pfeiffer & Stocking have identified five specific risk factors for gifted children in their "Vulnerabilities of Academically Gifted Students" (as cited in Gardynik & McDonald, 2005)

1. The gifted child has discordant or asynchronous development across the cognitive, emotional, social and physical domains.
2. Parents, teachers and others frequently have unrealistic expectations and misconceptions about giftedness and expect levels of distinction that exceed the abilities of the child. This can lead to chronic power struggles, defiance, passive-aggressiveness, depression, hopelessness, underachievement, drug and alcohol abuse.
3. Parents can become over-involved, or enmeshed, in their children's lives, creating undue pressure on the child. Excessive parental intrusiveness may result in rebellion or psychological complaints such as anxiety, depression, and eating disorders.
4. Frequently, there is a disparity between the instructional environment and the capabilities of the gifted child. School personnel might also believe that the child will be successful without special attention or opportunities. This results in boredom and even disengagement from school, provoking the gifted child to exhibit problem behaviors.
5. The gifted child may be vulnerable to social and emotional problems because he or she may have trouble finding an appropriate peer group or gaining acceptance within the desired group. (p.211)

The research evidence suggests that the G-T population as a whole does not exhibit significantly higher levels of vulnerability than the general population. It also, however, indicates that within this population there are individuals of great emotional sensitivity and intensity for whom giftedness itself creates greater challenges, especially with respect to the risk factors listed above. Two such groups

are the perfectionist gifted and the gifted and learning disabled, and the point to be explored here is whether the increased sensitivities of these two groups make them more vulnerable or more resilient to the risk factors they face.

2.3 Gifted and Perfectionist

In his seminal work The Psychodynamics of Normal and Neurotic Perfectionism (1978), Hamachek described two very different pathologies of perfectionism. The *normal* perfectionists were those who found real pleasure in their labours and from painstaking effort but who felt quite free to be less precise in some contexts than in others. The *neurotic* perfectionists were those who felt constantly unsatisfied and frustrated because in their own eyes they never seem to do things well enough.

Some researchers have stuck with Hamachek's original model and in 2000 a survey of 112 gifted adolescents in one small rural United States middle school, 87.5% were found to be perfectionists. Of these, 58% were found to display normal perfectionism while 29.5% were in the neurotic range (Schuler, 2000).

Other researchers sought to further elaborate Hammachek's model. In 1990, Frost, Marten, Lahart and Rosenblate developed a new scale of perfectionism called the Multidimensional Perfectionism Scale (MPS). The MPS was based on Hamachek's (1978) perspective of perfectionism but expanded that view to include three dimensions of perfectionism: self-oriented, other-oriented and socially-prescribed perfectionism (Siegle, Flett, Hewitt, Blankstein & Dynin, 1994; Schuler, 2000). The distinctions made between these three groups are described by Neumeister (2004):

> *self oriented* perfectionists set high personal standards for themselves and evaluate their own performance against these standards,
> *other-oriented* perfectionists are individuals who impose excessively high standards on others in their lives (and)
> *socially-prescribed* perfectionists perceive that significant

> others in their lives hold excessively high standards for them. (p. 260)

In the face of failure self-oriented perfectionists are often highly critical of themselves (Flett, Hewitt, Blankstein & O'Brien, 1991). In contrast other-oriented perfectionists tend to blame other people for their failure. Socially-prescribed perfectionists tend to blame factors such as luck and situational context. Socially-prescribed perfectionism was found to correlate with depression and low self-esteem whereas self-oriented perfectionism was associated positively with self control, resourcefulness and constructive striving (Flett, et al. 1991, Blatt, 1995). The common link between other-oriented and socially-prescribed perfectionists was seen to be a perceived lack of personal control and a tendency to attribute both positive and negative outcomes to external factors (Flett & Hewitt, 1998).

In a study of gifted college students' goal setting behaviour and reactions to failure, Neumeister (2003) discovered major distinctions between two of the these three types of perfectionists. With socially-prescribed perfectionists she found themes emerged of:

> fearing failure, setting performance goals, and practising maladaptive achievement behaviours in addition to themes of minimising successes, overgeneralising failures, and making internal attributions for failures.

In contrast, the self-oriented perfectionists, exhibited themes of:

> a desire for self-improvement, setting both mastery and performance goals, and practicing adaptive achievement behaviours as well as tendencies to make healthy attributions for successes and failures, and frustration with coping with failures. (p. 53)

In 2004, Neumeister investigated how these two dimensions of perfectionism (socially-prescribed and self-oriented), develop within gifted college students and influence their achievement motivation and their attributions for successes and

failures. All the students studied who scored high for perfectionism attributed that tendency to a lack of experience with failure in their early school years and to the actions of their parents. The main distinction came between the socially-prescribed perfectionists who believed their perfectionism developed due to pressure they experienced from their perfectionist parents and the self-oriented perfectionists who attributed their perfectionism to social learning due to their parents modelling of perfectionist behaviours (Neumeister, 2004a). This work confirmed the view of Ablard & Parker who in 1997 had found that "children of performance goal parents were significantly more likely to exhibit dysfunctional perfectionism than children of learning goal parents," and were more likely to have "a combination of high concern about mistakes, parental expectations, parental criticism, and doubts about actions" (p. 656).

G-T children are more likely to be perfectionist than non-gifted children, possibly due to unrealistic expectations and pressure to succeed from parents and teachers. This may exacerbate the developmental difficulties that most teenagers face, but most authors agree that perfectionism can be both a source of helplessness and frustration *and* a positive force for high achievement (e.g., Buescher & Higham, 1987; Schuler, 2002).

Perfectionism itself does not appear to *necessarily* produce vulnerability, but where it does, some perfectionists seem to react to that vulnerability with resilience while others react with helplessness. The socially prescribed and the neurotic perfectionists appear to be some of the most vulnerable, the most helpless and the least resilient of the gifted population.

2.4 Gifted and Learning Disabled

A gifted and learning disabled child (G/LD) has "exceptional talent or ability in one or more areas, either realised or potential, but also experiences specific academic problems as a result of underlying processing deficits" (Dole, 2000, p. 91). Dole observed the social-emotional characteristics of this group to be "poor self concept,

poor self efficacy, hypersensitivity, emotional lability, and high levels of frustration, anxiety and self criticism" (p. 92). These children sometimes appear in a school setting to be achieving at a normal level because their giftedness is compensating for their learning disability. "Their superior intelligence may be masked by their leaning difficulties while their learning disabilities may be hidden by their high cognitive ability. (Gardynik & McDonald, 2005, p. 211). The G/LD student may be identified as under-achieving or performing at an average acceptable level but may be doing so with great frustration.

The child who is G/LD may experience academic failure early and not be able to effectively self correct with any degree of success. This feeling of a lack of control increases vulnerability and can lead to helplessness, which can become a self fulfilling prophesy of failure. Knowing that they can comprehend at a superior level but being unable to complete tasks that other children find easy threatens the self confidence of these children (Whitmore & Maker, 1985). This is especially apparent if teachers or parents see this confusing pattern as laziness, stupidity or contrariness.

A learning disability is an adverse circumstance over which the child initially has no control (Whitmore & Maker, 1985). G/LD students may be unable to master basic spelling or reading, have poor organisational skills, be inattentive in class with low self esteem and poor peer relationships but at the same time have a large vocabulary, good analytical and comprehension skills and have an extraordinary interest or talent in a particular area (Fetzer, 2000). Often teachers and parents have quite different experiences of the same G/LD child. The parent finding the child to be highly motivated to participate in hobbies or pursue interests at home and the teacher finding much lower levels of motivation for learning at school (Robinson, 1999).

Waldron, Saphire and Rosenblum (1987), in a study comparing 24 gifted and learning disabled (and underachieving) students with 24 gifted high achieving students found that the G/LD students were more at risk for developing low self-

esteem and feelings of rejection. The G/LD students scored lower than their high achieving peers on all self concept factors, especially relating to their intelligence and school status. In a classroom situation the G/LD students were seen to adopt passive, isolated behaviours in order not to attract attention to themselves at the cost of internalised anxiety and lowered self esteem. At home, however, none of these behaviours were observed and no parents identified the "experimental children" (those that had been identified by their enrichment program teachers as being G/LD) as having learning difficulties. The authors attributed that discrepancy to the parents lack of specific training in detecting learning disability. However Neihart (1999) contends that this difference in achievement behaviour between school and home, is more accurately attributed to the lack of congruency between the educational opportunity provided and level of giftedness. She located the source of LD much more in the programme and the classroom practice rather than in any lack of psychological well being in the child. She also contended that this was particularly the case with extremely gifted children.

Unfortunately, school can become very difficult for some of these children. They often have belief in their abilities and think positively of themselves in out-of-school situations but their positive self image in school is undermined by repeated failure in academic tasks and in school they exhibit negative attitudes and poor work habits (Vespi & Yewchuck, 1991).

To investigate the efficacy of a strategy to overcome G/LD by focusing on the talent or gift while simultaneously working on deficits, Neilson and Mortorff-Albert (1989) worked with students who were G/LD in 35 elementary schools in Grades 3-5. They found that when the students only received services aimed at their deficits, their self concepts went down but when the programmes included a focus on their particular gift or talent as well, their self concept went up to a level virtually the same as gifted students without LD. Baum, Emerick, Herman and Dixon (1989) reviewed four Connecticut programs for G/LD that emphasised the development of the particular gift or talent of each. All programs had affected the students' school

behaviour with dramatic improvements in motivation, task completion, self esteem and basic skills.

Successful individuals with LD have been described as proactive, with an internal LOC and a strong sense of control over their lives, able to set goals, persevere, cope well with stress, make decisions and take responsibility for the outcomes of those decisions (Gardynik & McDonald, 2005). A good knowledge of their own strengths and weaknesses and the acceptance of themselves as persons who will experience *both* successes and failures have been identified as pre-requisites for success by academically successful adults with LD (Robinson, 1999). These successful individuals who are G/LD have many of the characteristics of resilient individuals such as adaptability, intelligence and a tremendous drive to use whatever ability they posses. They are able to elicit support from others and reframe negative events more positively and demonstrate the ability to use major life changes as opportunities (Whitmore & Maker, 1985). "Self-knowledge and self-acceptance, in turn, not only help these students develop realistic goals but also to persevere towards fulfilling them, all prominent characteristics of resilient individuals" (Dole, 2000, p. 97).

As with perfectionism, being gifted with a learning disability does not necessarily produce vulnerability, but some G/LD react to their situation with resilience, others with helplessness.

2.5 Gifted and Resilient

Renzulli & Smith (1978) were among the first to notice that many of the characteristics attributable to resilient children had also been recognised as the characteristics of gifted children. Bland & Sowa (1994) noted similarities between the two groups in "task commitment, academic achievement, verbal ability, reflectiveness, intelligence, the ability to dream, the desire to learn, maturity, an internal locus of control, risk taking, and self-understanding" (p. 78). Neihart (1999) found that the characteristics of gifted children that most enhanced their

resiliency were their ability to understand situations quickly and to problem solve skillfully, as well as their high intelligence, curiosity, moral regard, self efficacy, sense of humour and ability to predict the long term consequences of their present actions. Dole (2000) described both groups as having "high self-concept, good self efficacy, academic achievement, reflectiveness, maturity, an internal locus of control and self understanding" (p. 92).

Neihart & Olenchak (2002) saw these characteristics as a powerful set of protective assets to help the gifted achieve in the face of challenge and create within them a valuable sense of inner strength or resilience. However this does not mean that resilience is a necessary condition of giftedness as many variables including socio-economic status, race, culture, gender and disability place many gifted at risk.

One of the earliest studies examining the links between gender and resilience in gifted children was undertaken by Kline and Short (1991a, 1991b) who examined the effect of gender in two studies of 89 gifted females and 82 gifted males from Grades 1 – 12. They found clear gender-based differences in resilience development over the critical childhood and adolescent years. Gifted boys exhibited significantly higher levels of discouragement and hopeless feelings at the junior high school level than at the senior high school level, suggesting that the boys were developing resilience as they matured through the school system. The gifted boys reported a shift in focus as they got older from a reliance on relationships and external validation towards an emphasis on potential career success. Gifted girls, however, showed increasing emotional vulnerability with resulting decreasing resilience, courage and self assurance as they progressed through their school years. The gifted girls exhibited decreased self-regard, self-confidence and perception of ability, and increased levels of hopelessness, discouragement and perfectionism during that period. The authors suggested that for gifted boys societal expectations for them to move towards individuality, autonomy and self reliance positively influenced their career orientations as they progressed through high school. In contrast the expectations for gifted girls to value intimacy, empathy and the strength of

relationships conflicts with the career focus of high school. “It is not surprising then that we see high levels of self doubt, depression, discouragement and helplessness among girls in their later teens. Because of gifted girls’ increased levels of awareness, sensitivity, and potential, their conflict and loss are magnified.” (Kline & Short, 1991b, p. 118). In collaborating work a few years later, Lea-Wood & Clunies-Ross (1995) found that gifted adolescent girls (in Australian schools) had lower self-esteem than their non-gifted peers and also that their self esteem dropped from Year 7-9 as they moved through the junior secondary grades.

Research in the United States has shown race and culture to have significant influence on the development of gifted children with both gifted African-American and Latino youth facing high risk for not meeting goals commensurate with their abilities and talents. The over-representation of African American and Latino families in circumstances of poverty increases the chances of a lack of resources and external, un-planned for factors negatively influencing gifted students from those households (Hebert, 1996). Three successful gifted Latino youth studied by Hebert described family support, other supportive adults and involvement in extra-curricular activities as the most significant protective buffers which had kept them motivated to succeed.

The importance of external forces in helping gifted children to overcome disadvantage is supported by Nettles, Mucherah and Jones (2000) who found that the key factors that protected students against risk were external. They included caring parents with high expectations who got involved with their children’s education, involvement in out-of-school activities and good support from teachers. All of these factors also contributed to the students’ educational resilience and enhanced their academic performance. Masten, Hubbard, Gest, Tellegen, Garmezy & Ramirez (1999) found the combination of high IQ and supportive parenting to be the most significant factor in helping students to overcome great adversity and succeed.

Reis, Colbert & Hebert (2005) undertook a three year study of 35 economically disadvantaged, ethnically diverse, academically talented high school students including achievers and underachievers. All participants lived in a community where violence, drugs, poverty and crime were endemic and all came from families affected by poverty, unemployment, alcohol, drugs or mental illness. Various protective factors seemed to contribute to the development of resilience in the high achieving students. Some protective factors were internal or within the student, including self-belief, determination, inner will, motivation, positive problem solving abilities, independence and a heightened sensitivity to each other and the world around them. Other protective factors were more external, including peer and family support, positive parental involvement, education and employment, an interested teacher or other adult as role model, participation in special programs, extra-curricular activities, enrichment programs and challenging honours classes.

All the high achievers in this study were also found to make positive use of their spare time by being involved in numerous activities such as clubs, sports, music, and all had part time jobs. In comparison, the underachieving gifted were bored with their classes, negatively influenced by their peers and their environment, did not have effective problem solving skills, and had insufficient perseverance and low self efficacy. They had few high achieving peers, positive adult role models and generally did not participate in extra-curricular or after-school activities.

By looking at those resilient gifted who have suffered significant disadvantage, it can be argued that the exposure to the unique stressors in their lives related to their giftedness, intensity and sensitivity may have brought about their development of greater resilience, emotional strength and skill (Bland & Sowa, 1994). This raises the question of whether vulnerability, or at least exposure to risk, is a necessary pre-condition for the development of resilience.

2.6 General Resilience

A pioneer of resilience research in the early 70's was Garmezy (1974) who worked with the children of parents diagnosed with schizophrenia and a high risk for

psychopathy. Within this group he found a few children who resisted the effects of their parents mental illness well and managed to develop their own adaptive and healthy patterns of behaviour. In a break with the deficit focused medical model of the time he sought to identify factors that were important in the development of resilience in these children, and to understand the nature of their resistance to life's adversities. His work was supported at the time by Anthony (1974) who, while studying similar children, found some that effectively resisted being overwhelmed by their parents mental illness. He called these children *invulnerable*.

A similar characteristic called *hardiness* was identified by Kobasa (1979) in some middle and upper level executives in reaction to stressful life events. Kobasa identified characteristics of the hardy as being a stronger commitment to themselves, a willingness to take action and to deal with problems, a positive and active attitude to the environment, a sense of purpose, and an internal LOC.

One of the largest ever studies of resilience development ever undertaken was the 32 year Kauai Longitudinal Study on the island of Kauai, Hawaii, from 1955 until 1987. It followed 698 disadvantaged infants from their birth until the age of 32 (Werner & Smith, 1982, 2001). The infants were born into poverty, had a variety of biological and psychosocial risk factors pertaining to each of them and suffered stressful life events (Gardynik & McDonald, 2005). Werner and Smith found that a core of them, about one third, with four or more risk factors attributed to them, developed into competent, confident, caring and autonomous adults (Werner & Smith, 2001). From studying these children in comparison with the others in the study, three types of protective factors were found that supported the development of resilience in these children:

1. dispositional attributes of the individual, such as activity level and sociability, at least average intelligence, competence in communication skills (language and reading) and an internal LOC
2. affectional ties within the family that provide emotional support in times of stress, whether from a parent, sibling, spouse or mate

3. external support systems, whether in school, at work, or in church, that reward the individual's competencies and determination, and provide a belief system by which to live. (p. 80)

The title of the study was "Vulnerable but Invincible: A Study of Resilient Children" (1982). At the time resilience was considered to be a disposition which only developed in some children but which, once developed, became an invariable attribute or facet of that individual's personality.

Later in the eighties the concepts of invulnerability (Anthony, 1974), and invincibility (Werner & Smith, 1982), suggesting as they did a fixed attribute evidenced only in some children, gave way to the idea of resilience being a characteristic more fluid in nature and able to be developed and fostered in all children. Rutter (1987) and Benard (1993) showed that an individual's resilience varied over time and those who successfully coped with adversity at one time might react quite differently to stressors at another time. Research results began to reflect the idea of resilience as positive adaptation despite adversity, which was never permanent and more of a developmental progression with new vulnerabilities and strengths emerging with changing life circumstances (Luthar, 1991).

As well as identifying internal assets of the individual and external strengths or protective factors in the environment as important in the development of resilience, Rutter (1987) proposed the concept of *mechanisms* that protect against the psychological risks associated with adversity. He identified four main mechanisms or processes to build resilience: reduction of risk impact, reduction of negative chain reactions, establishment and maintenance of self-esteem and self-efficacy, and the opening up of opportunities.

The mutual consideration of risk and resilience at this point in time led to many studies through the nineties of disadvantaged children who succeeded, looking for common internal mechanisms and/or external factors which mitigated the effects of the risks they were exposed to.

Benard (1993) claimed that the four most common internal attributes of resilient children were:

1. social competence - responsiveness, empathy, caring, communication skills, a sense of humour
2. problem solving skills – planning, organising, seeking out resources, thinking critically, creatively and reflectively
3. autonomy – sense of identity and the ability to act independently and exert control over their own circumstances, task mastery, internal LOC, self efficacy, the development of resistance (to negative messages) and detachment (from dysfunction)
4. a sense of purpose – having goals, aspirations, achievement motivation, persistence, hopefulness, optimism.

McMillan & Reed (1994), in studies of *at-risk* middle and high school students, simplified this list down to a combination of high intrinsic motivation and an internal LOC, which seemed to characterise the successful, resilient, at-risk students. These students had a strong sense of self efficacy and saw themselves as being successful because they had chosen to be so and had put in the necessary effort. They had clear, realistic goals, were optimistic about their future and took personal responsibility for both their successes and their failures. These students believed that their success was primarily due to their own actions: "Resilient students do not believe that the school, neighbourhood, or family is critical in either their successes or their failures" (p. 138). "Even though they welcome and appreciate the efforts of the significant adults in their lives, they do not see these people as being responsible for their success or failure. They credit themselves" (p. 139).

Ford (1994) reinforced the idea of individuals taking personal action to be the base of resilience development. "Resilience, or the capacity to bounce back requires as an active stance, persistence, competence, flexibility and motivation" (p. 81). Floyd, in

a 1996 study of 20 African-American 12th graders from impoverished backgrounds, also located the source of resilience primarily within the child, finding their persistence and optimism to be critical resources called upon often in challenging and stressful circumstances both within and outside of school.

A focus on the internal characteristics or mechanisms of resilience is however incomplete without consideration of the contextual variables that promote their development. As Bonnie Benard (1993) put it, "When looking at this profile of a resilient child, we must look beyond personality traits and the ever present temptation to "blame the victim" or "fix the kid" and examine the environmental characteristics that have fostered the development of resiliency" (p. 45). She found that families, schools and communities that helped build resiliency were those characterised by

1. caring and supportive relationships,
2. positive and high expectations
3. ongoing opportunities for meaningful participation

This contextual approach to the development of resilience harmonised with earlier work by Garmezy (1991) who highlighted the protective effects of warm coherent families and external support from other adults such as teachers, grandparents and church members.

The specific role that schools could play in the development of resilience was brought into consideration by Benard (1993) who observed that effective schools provided opportunities for children to develop the internal assets of resilience such as problem solving skills, autonomy, a purposeful, constructive and optimistic outlook on the future, effective communication and relationship skills. McMillan and Reed (1994) pointed to a need for school programmes to be developed to promote an internal LOC in students, as well as self efficacy, optimism, and a sense of personal responsibility.

The influence of school was also highlighted by Connell, Spencer and Aber (1994) in three studies of the school outcomes of 10-16 year old at-risk African-American youth. They found that the single most significant factor in the students' educational success was the level of their parents' involvement in school, which predicted the students' engagement in school, which predicted school adjustment and performance. This effect was attributed to:

1. the students' experience of their family's support
2. their own sense of control over their success and failure
3. their feelings of self-worth and emotional security.

These factors were found to be more significant in effecting their behaviour in school than the negative influence of socio-economic factors.

In a long term research programme on resilience development at the National Center on Education in the Inner Cities, Wang, Haertel and Walberg (1997) found reinforcement for the important role that schools could take in helping students at risk of educational failure produce positive and resilient educational outcomes. They found the most important enabling conditions for student engagement were an orderly and safe school environment, student centred learning, well structured and responsive classrooms and site specific professional development for teaching staff. The teachers who were most able to assist with this process were found to be those who were prepared to help students "develop the values and attitudes necessary for persevering in their schoolwork and achieving high grades, and who foster educational resilience by promoting students sense of competence and positive self-concept" (p. 112).

In the late 1990's, Planta and Walsh (1998) argued against locating resilience in what they called a *single-location discourse,* within the child or the family or the school. They considered resilience to be a facet of competence which they believed was connected to many other factors in a broad social context. They described resilience as a characteristic of a "process involving the interactions of systems" (p. 412) produced by transactions between the child, the family, peers, school and

community. Planta and Walsh proposed that the more interactions there were and the more child-centred those interactions could be, the better the developmental outcomes would be for the child.

The complex interactions supporting resilient educational outcomes in conditions of adversity were further elucidated by Wayman's (2002) study of high school diploma and degree attainment of 1071 Mexican American and non-Latino White students, all of whom had *dropped out* and then returned to school. The factors found to most influence success were both environmental, in the home, school and community, and personal, the attributes and attitudes of the individual. Environmental factors included positive adult contact and an informal support network of friends, family and peers committed to education. Personal factors that were associated with educational resilience were a clear sense of purpose, a willingness to work hard, healthy self-concept, optimism, a positive attitude and the ability to avoid internalising negative messages. "The effects of some factors unalterable by schools, such as SES and parenthood, are rendered insignificant by introduction of educational resilience factors" (p. 177). Wayman found that the students' own beliefs about their possibility of success was predictive of their liklihood of returning for a degree, over and above other measures like grade point average and achievement in test scores. "Students who believe they will obtain a diploma are more likely to do so" (p. 177).

The effect of culture on the complexity of protective mechanisms operating to promote resilience was investigated by Wasonga, Christman & Kilmer (2003). The most significant factors found to produce resilience in Asian-American and African-American students were participation at home and expectations from parents. Hispanic students added in caring relationships and meaningful participation at school, and for White students, peer and community expectations and relationships were the most significant factors predicting resilience.

Many more papers have been produced on this topic, those more recently published reiterating a focus on external and internal protective factors to sheild at-risk students from the effects of those risks. Oswald, Johnson & Howard (2003) found the most important external factor to be schools:

> Characterised by being caring, attentive and stable environments which are success oriented in their predisposition, and which acknowledge achievements, including sporting, musical and artistic as well as academic. They show genuine personal interest in students and have teachers who are positive role models and mentors. (p. 52)

Borman and Overman (2004), in a study of 3981 minority, low SES students focused on internal factors: "Greater engagement in academic activities, an internal LOC, a strong sense of efficaciousness in math, a more positive outlook toward school, and more positive self-esteem were characteristic of all low-SES students who achieved resilient mathematics outcomes" (p.177). They also supported the role of the supportive school community that actively shielded children from adversity, as the most powerful school model for promoting resiliency. Bastian (2003) focused on what she called the four key dimensions of resilience, being internal LOC, high self esteem, a sense of meaning and purpose, and optimism. Das-Brailsford (2005) found a combination of factors helped Black youth in South Africa achieve academic success. The external factors were strong family support and good relationships with adult role models, and the internal factors were goal orientation, strong initiative and motivation and experiencing their own abillity to take active control. Similarly, Merdinger, Hines, Osterling and Wyatt (2005) in a study of 216 successful *emancipated foster care* college students, found that an extremely high goal orientation, self discipline and determination to have a better life than their parents were key common characteristics. The presence of positive adult role models with high expectations, often teachers, who intervened on their behalf and acted as "gatekeepers for the future" (p. 875) were important aspects.

In a parallel stream of research alongside these studies of the 2000's, are what Wilkes (2002) calls the *second generation* and Richardson (2002) calls the *third wave* of resilience research. Both acknowledge a movement from the identification of characteristics of resilient individuals towards the discovery of the processes of attaining resilient qualities in an attempt to understand the manifestation of resilience in all human beings.

Most resilience researchers have studied populations where extremes of vulnerability produce examples of resilience most notable by their scarcity. It is in these situations where the effects of uncontrollable, external forces and the urgency of simple survival can be so overwhelming to the majority that the resilient are easy to identify. The key themes that seem to pervade all these resilience studies are those of people actively taking control of their own lives where they can to reduce the randomness and helplessness of their situation, and at the same time maintaining an optimistic view of the possibilities that could be available to them. The problem with this approach is that it may lead one to suspect that resilience is only a characteristic of the impoverished or the disadvantaged. The third wave of resilience research is focused more on resilience development as conceptual change that may be operable even in the absence of significant risk (Wilkes, 2002; Patterson, 2002).

There is a clear need for more resilience studies of average and non-exceptional students in the middle and upper middle classes, especially studies regarding their educational resilience to see if differences in control and helplessness affect their educational outcomes. The key question that we are left with is whether there can be resilience without significant adversity? Or is adversity a subjective phenomena experienced by all people, in reaction to which some will generate resilience and some will not? It is in understanding some of the key developmental characteristics of resilience that the answer to these questions may be found.

2.7 Locus of Control (LOC)

The variable LOC, is significantly correlated with resilience in much of the literature on the subject (Kobasa, 1979; Werner & Smith, 2001; Bernard, 1993; McMillan & Reed 1994; Connell, Spencer & Aber, 1994; Bastian, 2003; Gardynik & McDonald, 2005;).

The concept of internal and external LOC developed out of social learning theory (Rotter, 1954) and is described by Rotter (1966):

> When a reinforcement is perceived by the subject as following some action of his own but not being entirely contingent upon his action, then, in our culture, it is typically perceived as the result of luck, chance, fate, as under the control of powerful others, or as unpredictable because of the great complexity of the forces surrounding him. When the event is interpreted in this way by an individual, we have labelled this as a belief in *external control*. If the person perceives that the event is contingent upon his own behaviour or his own relatively permanent characteristics, we have termed this a belief in *internal control*. (p. 1)

The first publication to pick up this concept and apply it in an educational setting was the *1966 Coleman Report on the Equality of Educational Opportunity*, reported in Nowecki et al (2004). In this report a connection was noted between an external LOC in individuals and lower academic achievement with higher rates of dropping out. Prociuk and Breen's (1975) study of university psychology students confirmed this connection, finding that internal LOC correlated with good study skills and academic success and external LOC correlated with poor study skills and academic failure.

Rotter, though, by 1975 was pointing out the difficulties in predicting consistent behaviour from LOC scores especially with students. He found a correlation in school students between internality and grades achieved, but no correlation once

they had entered university. Rotter's analysis attributed the discrepancy to two factors

1. the increased awareness of students as they matured, as to the correct answers to give on the LOC test, which might in practice differ greatly from their actual performance in studying; and
2. those students he called *defensive externals* who might express externality in an interview situation but demonstrate internality in a competitive academic setting.

Not withstanding these concerns, many literature reviews of the research in this area in the ensuing 30 years supported a connection between internal LOC and academic success. Weiner (1979) confirmed this correlation. He interpreted an internal LOC as being demonstrated when individuals saw an event as being caused by their own behaviour, and an external LOC if they thought it was caused by environmental factors that were independent of them. Weiner associated ability and effort with internal locus of control and task difficulty and luck with external locus of control. Millar and Irving (1995) incorporated the prediction of causality into their model of LOC and argued that an individual's belief about the probability of success in an academic task was determined by his/her perception of competence in relation to that task. They attributed academic achievement satisfaction mainly to internal factors (effort and ability), which Weiner (1979) perceived as stable and controllable.

Findley and Cooper's (1983) meta-analysis of 98 studies over 20 years found consistency with predictions made by Rotter in social learning theory (SLT) and they drew a "confident conclusion that internality and academic achievement are positively related" (p. 424). They found the relation to be stronger for males than for females and also stronger for adolescents than for either adults or children. This last conclusion was supported by Kalechstein and Nowicki (1997) 11 years later in a follow-up survey of 80 papers published since 1983. They also found the strongest link between internal LOC and academic achievement in secondary students but found no significant differences in this relationship between the sexes. Millar and

Irving (1995), and Twenge, Zhang, and Im, (2004), from extensive reviews of studies into LOC and academic achievement covering elementary school through to university also all concluded that academic achievement and internal LOC were positively and significantly related.

A contrasting result was presented by Grimes (1997) who found that academically under-prepared community college students did not score significantly lower GPAs than well prepared students even though they were more external in LOC. However, these students did appear to fit into Rotter's (1975) *defensive external* category, which may explain the results.

Modern day studies all appear to confirm the majority of the findings. Gifford, Briceno-Perriott & Mianzo (2006) tested 3066 first year university students in a southern state for LOC and found that those with a more internal LOC achieved significantly higher GPAs than those with a more external LOC. Morris, Wu & Finnegan (2005) found that internality on LOC measures was one of the two most significant factors predicting university graduation rates, and Uguak, Elias, Uli & Suandi (2007) in a study of 210 school students found that 96% of the students attributed the causes of their success to internal elements.

The largest longitudinal study of the factors influencing academic achievement was conducted by Flouri, (2006) over a 30 year period. The study used longitudinal data from sweeps of the 1970 British Cohort Study (BCS70). Of these, 1,326 men and 1,578 women were included in the final analysis. The birth to age 10 factors that were controlled for were birth weight, parental social class, socio-economic disadvantage, emotional/behavioural problems, cognitive ability, and mother's educational attainment. An internal LOC and mother's interest were found to be significantly related to educational attainment for both men and women.

The relationship between psychological adjustment and LOC was explored by Gilmour (1978) in a review of nearly 100 studies published to date, who found that

"there does appear to be substantial support for the notion that children and adolescents who hold internal beliefs function in a more positive, efficacious and adaptive manner in both achievement and non-achievement activities and situations than do their external counterparts" (p. 1). In considering strategies for developing or changing such beliefs, Gilmour felt that the most critical factor was the awareness in the student of behaviour-reinforcement contingencies, although he did not find any consistent increase in LOC with the age of the subject.

Consideration of reaction to stress and the link with LOC was explored by Wolk and Bloom (1978) in a study of junior high school students. The researchers showed that the students with a more internal LOC were able to sustain task performance under high stress and achieve completion even in restricted time, whereas for the more external LOC students high stress was more debilitating and brought about performance deterioration and an inability to complete on time. This relationship was further confirmed by Luther (1991) in a study of 144 inner city ninth grade students from a public school in Connecticut. She found that in comparison to children with an internal LOC, those with an external orientation showed greater declines in functioning with increased stress levels. Similarly Weist, Freedman, Paskewitz, Proescher and Flaherty, (1995) in a study of 164 ninth graders in Baltimore found that belief in an external locus of control increased both boys' and girls' vulnerability to the effects of life stresses. Extremes of vulnerability can be evidenced by consideration of suicide, as de Man and Leduc (1994) found in a study of 111 Canadian high school students from age 12-18, which showed that high suicide ideation correlated with externality and a belief that the outcome of their lives was determined by powerful others, chance or fate.

An internal LOC orientation and effective self control were seen by Prufal-Struzik (1998) as being linked determinants of psychological health in individuals. In a study of 60 Polish, 13-14 year old students, she found that the *well adjusted* students had a more highly internal LOC and reacted to frustration with self regulation while those with a more external LOC tended to be more reactive, more defensive and less

well adjusted. Those with internal control were found to be "more ambitious, efficient and independent in action, they strive harder for success and believe it can be achieved" (p. 198).

Academic achievement under conditions of stress or major disadvantage has also been related to LOC orientation. In a study of 17,000 10th graders from low SES families, Peng, Lee, Wang, and Walberg (1992) found that a combination of internal LOC and high educational aspirations was a significant predictor of academic achievement. Finn and Rock (1997) also found that higher self esteem and an internal LOC were associated with school success for low income minority students. An intervention designed to increase internality with respect to LOC for students at risk of educational failure, helped significantly increase the graduation rate for those students over other at-risk students *and* over regular students (Nowicki, Duke, Sisney, Stricker & Tyler, 2004). In this study of 90 at-risk junior and senior high school students in Louisville, Kentucky, the authors found that the two most significant internal motivational factors correlating with engagement and academic success were self esteem and LOC. At university level "the three most prominent factors associated with degree attainment for dropout adolescents were academic aspiration, organisational skill and locus of control" (Suh & Suh 2006, p. 18).

The importance of LOC orientations has also been highlighted in relation to giftedness. Milgram and Milgram (1976), in comparing 182 gifted Israeli students with 310 similar but non-gifted students on the basis of personal social adjustment, found that the gifted had more positive self concept, more internal LOC and lower general and test anxiety. Increased internality was also found to correlate with increased academic achievement in comparisons between three groups of 9-10 year old South African students. Internality increased in a gradient from the learning disabled students to the non-gifted students and to the gifted students (Fincham & Barling 1978). Girls were found to be higher achieving than boys in a study by Lao (1980) of 365 American grade 11 and 12 high school students. The high achieving girls were characterised by internal LOC, high achievement motivation and low

dependency. Olszewski-Kubilius, Kulieke and Krasney, (1988) also supported these character links (but not the gender links) in finding that gifted students generally scored higher than average students on internal LOC as well as intrinsic motivation and autonomy. Moore & Margison (2006) found gender differences in under-achieving gifted students, with males more external than females and with females more test anxious than males. They also found that the achieving gifted students had more of an internal LOC orientation than either the non-gifted or the under-achieving gifted students.

In looking at gifted students from diverse cultures, Yong (1994), in a study in the United States of 169 gifted 7^{th} and 8^{th} grade students of African, Mexican and Chinese descent found that although there were small differences between the cultural groups, in general, they all had positive self concept, internal LOC and displayed reciprocity and emotional empathy. Prufal-Struzik (1998) found similar results in a study of Polish 13-14 year olds. Comparing 30 creatively gifted with 30 non-creatively gifted students she found that those with the highest level of creative thinking abilities also had the most internal LOC.

In summary, there appears to be a broad acceptance in the literature of a correlation, and some acceptance of a causal connection, between an internal LOC orientation and academic achievement. Internal LOC has been linked with greater psychological well being, the ability to cope with stress, and both efficaciousness and engagement at school for normal students, disadvantaged students and gifted students. In short, behaviours related to an internal LOC are almost identical to behaviours reported as being manifestations of resilience.

In light of this agreement, it is interesting to note that in a meta-analysis of over 140 (United States only) studies into LOC covering 42 years from 1960-2002, Twenge et al. (2004) found that the average college student in 2002 had a more external LOC than 80% of similar college students in 1960. As the authors state, "The implications are almost uniformly negative, as externality is correlated with poor

school achievement, helplessness, ineffective stress management, decreased self-control, and depression" (p. 308).

The manifestation of helplessness, as theorised by Seligman (1975) as *learned helplessness*, is linked closely to beliefs about control as Luthar (1991) explains:

> When people believe they are powerless to control what happens to them, they become passive and restrictive in coping abilities. On the other hand, when individuals believe that events and outcomes are controllable, learned helplessness is avoided, and, instead, active attempts are made to overcome aversive situations. (p. 610)

2.8 Learned Helplessness (LH)

LH theory developed out of SLT and LOC theory (Rotter 1966, 1975; Abramson, Seligman & Teasdale, 1978). In looking for an understanding of the manifestation of achieving and failing behaviours, Rotter (1966) was interested in an individual's beliefs about causality, with control as the variable, either internal or external. Internality was seen as producing more mastery behaviour than externality. Weiner (1971, 1979) looked at how beliefs shaped attributions and how attributions influenced behaviour. Weiner separated control from what he called locus of causality, and added in stability over time to create his three key variables. Psychological well being, self esteem, self concept and positive self-motivation were seen to be linked to internal, controllable and stable attributions for *good* events and eternal, uncontrollable and unstable attributions for *bad* events. Seligman (1975) then focused in on reactions to aversive situations and specifically the contingency/non-contingency discriminations between response and outcome made by people exhibiting either helpless or mastery behaviour. As Valas (2001) explains, "The expectation of non-contingency (between acts and outcomes) is the crucial determinant of the symptoms of learned helplessness" (p. 72). LH was linked by Seligman (1975) to depression and was found to be most likely in an individual who felt nothing they could do could control important outcomes in their life.

In answer to critics who thought that this theory could not accurately predict susceptibility to helplessness, the specificity of the helpless reaction, the stability of helplessness over time, or the connection to self-esteem, Abramson, Seligman and Teasdale described the reformulated helplessness theory in 1978. "According to this reformulation, the explanations people give for good and bad outcomes influence their expectations about future outcomes, and thereby influence their reactions to outcomes" (Nolen-Hoeksema, Girgus & Seligman 1986, p. 438). If individuals attribute *stability* to the causes of bad events, make them *global*, or blame themselves, they are much more likely to be helpless than if they attribute instability, specificity and external causes to any bad events. Abramson et al. (1978) found that an individual with an habituated attributional pattern of explaining bad events by internal, stable and global causes would be more likely to experience general and lasting symptoms of helplessness than a person of the opposite style. An habituated attributional pattern became known as an *explanatory style* and a helpless explanatory style was linked with depression.

Explanatory style was subsequently linked to academic achievement by Peterson & Barrett (1987), who found in a study of 87 first year university students that those who attributed (hypothetical) bad academic events to internal, stable and global causes, received lower grades than those who used attributions to external, unstable and specific causes. In 1989 Fincham, Hokoda & Sanders in a study of 87 third grade children found that helplessness scores in third grade were inversely related to achievement test scores in fifth grade.

Looking for any relationship between explanatory style and helplessness in academic performance and health of the individual, Peterson, Colvin and Lin (1992) ran two studies with 40 summer school students at the University of Michigan. They found passivity in response to setbacks, whether academic or medical, related to the use of stable and global attributions for bad events but not significantly to internality. Internality was found to be interpreted by the students in two clearly

different ways. A distinction was made between behavioural internality (*I was mistaken*), which led to positive action, and characterological internality (*I am stupid*), which led to helplessness.

Peterson et al. (1992) also explicitly made the connection between helpless/mastery explanatory styles and optimism/pessimism styles of thinking. "Some people typically use stable, global and internal explanations; we call this style helpless or pessimistic. Other people typically use unstable, specific and external explanations, we call this style efficacious or optimistic" (p. 2). Seligman at this time coined the 3 P's of learned helplessness attribution. Those with a pessimistic explanatory style attribute failures or setbacks they experience to causes they see as being *permanent*, *pervasive* and *personal*, and become helpless. Other people avoid LH through an optimistic explanatory style through which they attribute failures to temporary, local and impersonal causes (Wieschenberg, 1994).

Much evidence for the efficaciousness of an optimistic explanatory style came from medical research. Scheier & Carver (1992) found in female patients that optimism was inversely related to post-partum depression, distress after breast surgery and the severity of abnormality in abnormal PAP smears. After surgery, optimists were also found to recover faster, be less likely to develop complications and to maintain better physical health after five years than were pessimists. Optimists were found to be more likely than pessimists to maintain a healthy eating programme, reduce their intake of saturated fat, take up exercise and reduce body fat. They were more likely to complete an alcohol abuse rehabilitation programme and less likely to commit suicide. Optimists seemed to be both better able to accept the reality of an uncontrollable situation than pessimists, and to be more solution focused in their planning and acceptance of treatment. Pessimists tended to engage in much more denial and escapism.

Young children were thought to be invulnerable to helplessness due to their lack of distinct trait conceptions but Burhans and Dweck (1995) found that pre-school and

early elementary school children were susceptible to helplessness if they had a tendency to attribute global self blame in response to failure or criticism. Learned competence was found to occur in a study of 60 French high school students by Gernigon, Fleurance, and Reine (2000), but only in "a controllable situation ending in success," whereas "only an uncontrollable situation ending in failure was found to induce learned helplessness" (p. 52).

The causes or mediating conditions for the development of a helpless or a mastery explanatory style have been explored by some authors. The nature of the teaching/learning experience was found to be a significant factor in the development of symptoms of helplessness with medical students engaged in clinical training (Chaput de Saintongue & Dunn, 1998). The researchers concluded from their results that didactic learning environments where adverse events are perceived as being pervasive and inalterable, prevent the development of autonomy, impair student achievement and can induce helplessness. Helplessness and subsequent performance deterioration was able to be effectively induced through the use of unsolvable mazes in an interesting study of 92 Turkish university undergraduates in psychology (Cemalcilar, Canbeyli & Sunar, 2003).

Discouragement and the expectancy of failure on test scores were found to induce helplessness in a study of 61 first year psychology students (Firman, Hwang, Copella & Clark, 2004). In this experiment, two groups of students were given the same test containing both easy and very difficult questions. One group was given the easy questions first and the other group was given the very difficult questions first. The students who completed the difficult questions first performed significantly worse on the easy questions than those who started with the easy questions, demonstrating a deterioration in performance possibly due to discouragement or the expectation of failure.

If *mastery* can be categorised as the state of mind most opposite to *helplessness* then the behaviours manifesting from mastery are very similar to those reported as

resilient behaviours *and* those reported as stemming from an internal LOC. However, internality in the LH model is generally seen as supporting resilience only when it relates to an individual taking responsibility for success, and not in relation to taking responsibility for failure. Externality with respect to failure is seen as the optimistic, efficacious, resilience-supporting strategy. This is at a variance with LOC theory, which suggests that taking responsibility for failure, where appropriate, is an essential first step in gaining control and taking positive action in a resilient manner to ensure that similar failures do not re-occur in the future. Peterson et al. (1992), acknowledged the possibility of internality being a force for alleviating helplessness in an aversive situation with their distinction between behavioural internality leading to positive action, and characterological internality leading to helplessness. Seligman (1995) also acknowledged that *blind* or *empty optimism*, which places all responsibility for negative events outside the self, while being a good protective mechanism in warding off simple depression, has limited efficaciousness in helping one learn from one's mistakes, a key feature of resilient behaviour. Seligman supported the idea of helping individuals to become more accurate in their assignment of responsibility or blame, either internally or externally, for aversive events in their lives and at the same time maintaining a consistently optimistic outlook. This is a difficult double act.

A common thread running through all the LH research is the connections between beliefs shaping attributions and attributions influencing behaviour. As Ziegler, Finsterwald and Grasinger (2005) point out, "Helplessness in any domain does not reflect the objective achievement ability of a student but rather their subjective assessment of their efficaciousness and perceived talent" (p. 8). The importance of the belief structure underlying attributions, and the susceptibility of that belief structure to suggestion or influence, appears to be at the core of all the topics covered so far: vulnerability, resilience, LOC and LH.

2.9 Attribution

Fritz Heider, the founder of attribution theory, proposed that, in order to give stability and predictability to their lives, people always strove for understanding and prediction of daily events (Heider, 1958). They did this through attributions or messages they gave themselves, in which there were four main causal elements – ability, effort, task difficulty and luck. Task difficulty and luck were seen as external and uncontrollable elements whereas ability and effort were thought of as internal and controllable. Considerable difference was found between people characterised by predominantly external causal attributions and people characterised by predominantly internal causal attributions. Weiner (1973) built on Heider's original theory, focusing primarily on only two causal elements, effort and ability. He found that "individuals highly motivated to achieve success assume personal responsibility for success and attribute failure to a lack of effort. Persons low in achievement needs do not take credit for success and ascribe failure to a lack of ability" (p. 11). Reinforcement for this idea came in the same year from a study of elementary school children by Dweck & Repucci (1973) who found evidence of helplessness associated with a tendency to attribute failure to a lack of ability which did not appear in children who attributed failure to a lack of effort.

This work led to the identification of two major patterns of behaviour: the *helpless* pattern, characterised by ability attributions for failure, an avoidance of challenge, and a deterioration of performance in the face of obstacles; and the *mastery-oriented* pattern, which in contrast involved effort attributions for failure, the seeking out of challenging tasks and the maintenance of effective striving even under adverse conditions (Diener & Dweck, 1978). Linked in with these two general patterns was a framework of goal achievement orientation which identified two distinct types of goals: *performance goals*, sought in order to gain approval or avoid disapproval from an external other, and *learning goals* which were sought in order to improve the individual's knowledge, ability or competence (Dweck and Elliott, 1983).

Further research revealed that a focus on performance goals was found to be linked to the helpless pattern of response behaviour, whereas the pursuit of learning goals in the same situation promoted the mastery-oriented pattern. Particularly striking was the way in which the performance goal orientation in students with low self-perceived ability "produced the same pattern of strategy deterioration, failure attribution and negative affect found in naturally occurring learned helplessness" (Elliott & Dweck, 1988, p. 7). A learning goal orientation was found to be associated with high achievement motivation, persistence, enjoyment and resilient performance in the face of setbacks. Ames and Archer (1988) in a study of 176 academically advanced Grade 8-11 students found that "…it was the degree to which the classroom climate emphasised mastery, rather than performance, that was predictive of how students chose to approach tasks and engage in learning" (p. 264). Shunk (1989) also found that effort feedback for past successes supported students' perceptions of their progress, sustained their motivation and increased their efficacy in learning.

These findings were reinforced by Koestner and Zuckerman (1994) in a study of 60 college students, where they discovered that the performance oriented students often exhibited classic helpless behaviours, including making self-defeating performance attributions and negative self-evaluations. Conversely, those who were learning goal oriented tended to exhibit more adaptive behaviours and were more mastery oriented. In Australia at the same time, a study of 893 college students found that the learning oriented students had a much more positive attitude towards their studies and were more likely to choose a difficult task to complete than their performance oriented colleagues, who opted for more easy tasks (Archer, 1994). A study of 199 college students ranging in age from 17 to 59 years by Burley, Turner and Vitulli, (1999) also confirmed a relationship between learning goal orientation and adaptive achievement behaviours. In addition, it was found that older students were more likely to be learning oriented and younger students more performance oriented.

At the basis of the choice between performance or learning goals was found to be a belief about the stability of intelligence. Those who believed that their intelligence was able to grow and develop were more interested in learning for the sake of *improving* their knowledge base, skills or abilities. Those who believed that their intelligence was a fixed attribute were more interested in performance as a means of *proving* they had the knowledge, skills or abilities. Dweck and Leggett (1988) called these two orientations the *entity* and *incremental* theories of intelligence. Students who believed that their intelligence was malleable and developable (incremental theorists), were learning goal oriented, adaptable, open to new ideas and were found to be less helpless in the face of negative responses. Students who believed their intelligence was a fixed attribute (entity theorists) were performance goal oriented, more helpless and less resilient in the face of adversity (Dweck & Leggett, 1988; Chiu, Dweck, Hong, Lin & Wan, 1999). In investigating the origin of these beliefs Archer (1992) found that teachers who reinforced incremental theory beliefs in the classroom produced students who used more effective learning strategies, liked their class more, attributed success to good teaching, and did not attribute failure to poor teaching.

By 1997, Dweck was seeking to discover if there was any *focal phenomenon of personality*, or consistent difference in self concept, that was behind an individual's orientation towards helpless or resilient behaviour. Her 1997 study showed that resilience in the face of rejection was predicated by a student's belief in the malleability of personality. In a similar discovery to her work on intelligence attribution Dweck found that those who thought personality was malleable and could be changed or developed were more resilient in response to adversity than those who thought personality was fixed. The latter were found to be more helpless (Cain, Duma-Hines, Dweck, Endley & Loomis, 1997).

In her book "Self-Theories: Their Role in Motivation, Personality and Development", Dweck described the overall characteristics of a *mastery* style as being an orientation towards setting learning goals and demonstrating adaptive

behaviours, and a belief in the flexibility of intelligence and the primacy of effort. The characteristics of a *helpless* style were an orientation towards setting performance goals, demonstrating challenge avoidance behaviour and a belief in the fixedness of intelligence and the primacy of ability. One of the clearest differences between the two styles was seen in response to failure. The mastery individuals attributed failure to a lack of effort and took effective remedial action but the helpless individuals attributed failure to a lack of ability about which, they believed, there was nothing they could do (Dweck, 1999).

The influence of different forms of praise on the beliefs of the individual were explored by Mueller & Dweck in 1998. In six studies of 412 5th grade students they compared the goals and achievement behaviours of children praised for intelligence with those praised for hard work under conditions of success and of failure. Those commended for intelligence after successful experiences became performance oriented and blamed poor performance on their lack of ability. Children praised for their hard work however, became more learning oriented, and if they performed poorly they blamed a lack of effort and demonstrated a determination to learn strategies that would enhance subsequent performances. As Dweck observed:

> Praising children's intelligence, far from boosting their self esteem, encourages them to embrace self-defeating behaviours, such as worrying about failure and avoiding risks. However, when children are taught the value of concentrating, strategizing and working hard when dealing with academic challenges, this encourages them to sustain their motivation, performance and self esteem. (Meuller & Dweck, 1998, p. 33)

Investigations into the nature of the belief itself, whether incremental or entity, found it to be highly amenable to suggestion. The confirmation of a particular viewpoint of intelligence (either entity or incremental) in a text reading exercise with school children was enough to produce subsequent behaviours congruent with that belief. Lower self esteem and higher negative affect in response to aversive

circumstances characterised the entity group when compared to the incremental theory group (Niiya, Crocker, and Bartmess, 2004).

In 2004 Seifert also found mastery and helpless behaviour patterns to be significant, as two of the four patterns of student behaviour he discovered. These patterns were revealed by attributions made by students in response to academic success and failure.

1. *Mastery pattern*: intrinsically motivated, positive affect, flexible and adaptive strategy use, persistence and the ability to learn from mistakes; confident, efficacious, self-determined with a strong sense of control. Take full responsibility for their own successes and failures which they attribute to internal, stable, controllable causes (e.g. effort)

2. *Failure avoidance pattern*: concerned to maintain ability perceptions and protect self worth, focused on performance measures, believe in the primacy of ability over effort, procrastinating, rationalise any mistakes or failures. Take responsibility for their successes but not their failures, they attribute both successes and failures to internal, stable, uncontrollable causes (e.g. ability).

3. *Learned helplessness pattern:* unwilling to engage in tasks, effort is futile and failure is imminent, performance outcomes are out of their control, feel incompetent, unable to take positive action. Take responsibility for their failures but not their successes, attribute failure to internal, stable, uncontrollable causes, and success to external forces.

4. *Work avoidance pattern*: choosing to under-perform due to perceived boredom or meaninglessness or as an aggressive response to an inadequate learning situation, demonstrates high volition. Takes no responsibility for success or failure and attributes each to external causes both stable and unstable, controllable and uncontrollable.

In a very similar vein, Martin and Marsh (2003) described a mastery pattern of behaviour in students he called the *Success Oriented* and a helpless pattern of behaviour in students he called the *Failure Avoiders* and the *Failure Acceptors.* The

three groups were distinguished from each other most significantly by their different reactions to failure. The Success Oriented exhibited no fear of failure and used failure as feedback, altering their behaviour where necessary. The Failure Acceptors expected failure, were resigned to it and were subsequently helpless. The Failure Avoider category broke down further into three self explanatory groups, the Overstriver, the Defensive Pessimist and the Self Handicapper.

By 2007 Dweck's mastery and helpless attributional patterns had evolved into what she called the two *Mindsets, Fixed* and *Growth*. Children with a fixed mindset believe that their intelligence and their abilities are fixed at their present level and unlikely to be improved by learning. These children are concerned about performance outcomes and are constantly engaged in having to prove their ability with minimum effort. They tend to see every assessment as a judgement of themselves and an opportunity to fail and any setback becomes a catastrophe. In contrast, children with a growth mindset are focused on learning as a means to grow and improve their abilities and their intelligence. They view assessment as feedback on progress and any failure as an opportunity to learn something new. As observed in 1998, praise for ability or intelligence helps create the fixed mindset and praise for effort or hard work helps set up the growth mindset.

In an intervention with NYC junior high school students with plummeting grades, students were directly taught study skills, time management and memory training but half of them were also taught about their brain's ability to grow new connections and effectively develop more intelligence. After the training ended three times as many students from the *brain-growth* group showed marked improvements in achievement motivation than in the other group (Dweck, 2007).

The empirical evidence discussed here so far confirms three key ideas, that beliefs influence attributions, that attributions influence behaviours, and that beliefs are amenable to suggestion. Questions still remain as to the mechanisms that operate in these three relationships but more significantly for this study, the question is

whether students who are not achieving to their potential can become more academically successful through being helped to become more resilient.

2.10 Gifted Underachievement

Gifted underachievement has been described as a discrepancy between intellectual potential and academic performance (Baum, Renzulli & Hebert 1995, Dowdall & Colangelo 1982, Emerick 1992). Potential was traditionally measured by IQ test and performance taken from examination results. Today, with the acceptance of the multiplicity of intelligence and a reduction in the significance of examination results in some schools, gifted underachievement is seen more as unfulfilled potential. Some researchers consider the concept of gifted underachievement to be something of an oxymoron (Hoover-Schultz, 2005), due to the eligibility criteria for participation in gifted programmes in some schools requiring strong academic performance. Most authors agree however, that no matter how they are defined or selected, within almost any group of G-T students there will be a gradient of academic performance from the underachiever to the high achiever (Reis & McCoach 2000).

Gifted underachievers have been found to have low self-esteem, low self-concept and be socially immature (Dowdall & Colangelo, 1982), to be alienated and withdrawn (Deslile 1982), and aggressive or hostile (Diaz 1998) and yet paradoxically have also been found to be socially active, outgoing and extroverted (Whitmore, 1986). They have been found to exhibit a fear of failure (Laffoon, Jenkins-Friedman & Tollefson, 1989), a fear of success (Ford, 1992,) an external LOC (Olszewski-Kubilius et.al, 1988; Vallerand et al. 1994) and helplessness, with poor coping skills, poor self regulation and a lack of perserverence and self-control (Gallagher, 1991; Baum, Renzulli & Hebert 1995).

Differences in underachievement profiles between genders have been explored by Vlahovic-Stetic, Vlasta & Lidija (1999) in a study of 147 Croatian 9-10 year old students. They reported that overall, the gifted underachievers showed higher

attribution of failure to external causes and lower self concept than gifted achievers. The underachieving gifted girls had less self confidence and less self control than achieving gifted girls and the underachieving gifted boys were less emotionally stable and less serious than their achieving counterparts. Nelson and Smith (2001) found a gender disadvantage in academic achievement for gifted girls which Dai (2001) ascribed to them facing a choice of risking failure in order to maximize their potential, or avoiding failure to preserve their self image even if it meant missing learning opportunities.

In exploring goal differences, Larry Geffen (1991), in a study of gifted minority high school students, found that the high achievers saw high school as a means to get to college. They were loyal to this goal over their peers and placed causation for success or failure within themselves. In contrast, he found that the gifted underachievers saw that the purpose of going to school was to be with their friends, and they placed causation for achievement or failure outside of themselves. Similarly, Gallagher (1991) found underachieving gifted students tended to attribute failure to a lack of ability and success to good luck. Davis and Connell (1985), however, found that underachieving gifted students were aware that their own lack of effort was the prime cause of their academic failure. Albaili (2003), in a study of 144 United Arab Emirates secondary school intellectually gifted students, found that achieving students were more inclined towards effort, task and completion, and they showed more mastery goal orientations than did the underachievers. They were more oriented towards performance and socially dependent goals. These achievers did however reveal one performance attribute in that they were more competitive than their underachieving counterparts. Albaili attributed this to the nature of the UAE education system which, "…puts great emphasis on competition as a major criterion for academic success" (p. 116). Competitive classroom climates and normative assessment practices were also seen by Dai et al. (1998), to exacerbate the problem of gifted underachievement. The experience of ongoing failure in a competitive academic environment biased the low achievement gifted students towards an ability attribution for failure in order to create an external rationale for it.

Long term effort was the top causal element with respect to school success identified in a study of 3280 gifted elementary, middle and high school students (Assouline, Colangelo, Ihrig and Forstadt, 2006). For achieving success, ability was seen as the next most important element, but for avoiding failure, situational effort was seen as the key. Interestingly enough, the students were between 10-30 times more likely to attribute success to the presence of ability than to attribute failure to a lack of ability.

It appears that finding any over-arching psychological construct applicable to all gifted underachievers is unlikely. As Reis & McCoach (2000) point out:

> For each personality trait common to gifted underachievers, there are many other underachieving gifted students who do not exhibit that trait. In addition, students who are not underachievers may exhibit one or several of these characteristics. Often, the lists of common personality traits contradict one another. Even the research on common characteristics in underachieving gifted students is often inconsistent. (p. 158)

Many possible contributing causes of gifted underachievement have been found including families in conflict or generally unsupportive, poor personal adjustment to difficulty, weak self control, poor study skills and disabling affective factors (Fehrenbach, 1993; Reis & McCoach, 2000). However it is also possible that, in some cases at least, gifted underachievement is not simply a passive response to uncontrollable internal or external factors but an active and deliberate choice.

Gifted underachievement has been related to a lack of personal relevance of the material being studied (Emerick 1992) resulting in boredom. Dai et al. (1998) found that gifted students who are easily bored and do not care about doing well in school are likely to under-achieve. Gallagher and Harradine (1997), in a study of 871 gifted students from elementary to high school reported that a lack of challenge in school

brought about underachievement. They highlighted slow pace, repetition of material already mastered, the inability to move ahead, few opportunities to study personal interest topics and the emphasis on memorisation of facts rather than the use of thinking skills as factors that brought about boredom, inattention and consequent underachievement. Larson & Richards (1991) in a study of 392 fifth to ninth graders, found high rates of boredom correlating with high ability and also with oppositional behaviour. Boredom was, however, only noticable for the high ability students within, not outside of, school, "suggesting their boredom is not dispositional but rather related to a lack of stimulation and challenge in their classes" (p 438). Disengagement by an active questing intelligence in an un-stimulating environment can be easily understood and could be seen as a self defence mechanism against frustration, either automatic and unthinking or as a considered and deliberate action.

In case studies of 10 gifted underachieving Canadian high school students Kanevsky and Keighley (2003) found disengagement was used as a deliberate strategy by some gifted students with "a growing sense of moral indignation" in response to an unstimulating and unchallenging curriculum. These students felt that the only *honourable action* was to disengage and cease production. This type of gifted under-achieving student has previously been identified by Delisle (1992) as a *non-producer* or *selective consumer*. These students are at risk academically but they tend to be self-assured and independent and simply choose not to attend classes and complete assignments and thus maintain their psychological stability. Delisle found them to be in contrast to the more obvious gifted underachievers, who were more dependent learners, had low self esteem, were failing attendance and assignment tasks and were at risk both academically and psychologically. The differing characteristics of underachievers and selective consumers are shown in Table 1.

Table 1. Characteristics of Underachievers cf. Selective Consumers

Underachievers	**Selective Consumers**
Do not understand causes or cures	Can explain both the problem and possible solutions
Are dependent and reactive	Are independent and proactive
Tend to withdraw	Tend to rebel
Respect or fear authority figures	See teachers as adversaries; can be contentious
Need both structure and imposed limits	Require little structure; need "breathing room"
Exhibit uniformly weak performance	Exhibit performance that varies relative to teacher and/or content
Generally require family intervention	Can usually be dealt with within school resources
May change over the long term	May change "overnight"
Are often perfectionist: nothing they do is good enough	Are frequently satisfied with their accomplishment
Have a poor academic self-image	See themselves as academically able

(from Delisle and Galbraithe, 2002).

Csikszentmihalyi, Rathunde and Whalen (1993) claimed that gifted students are not motivated by goals that are too easy or too difficult but by goals that are challenging but achievable. Alfi, Assor and Katz (2004) point out that "Optimal challenge, by definition, entails the possibility of temporary failure and frustration. In fact the possibility of such temporary failure makes such tasks optimally challenging and therefore interesting and intrinsically motivating" (p. 31). But this would seem to be true only for the particular student who is confident of being able to cope with temporary failure. Another student in anticipation of even temporary failure may well slip into helpless or self-handicapping behaviour. This type of academic

underachiever has been shown by Nurmi, Onatsu and Haavisto (1995), "typically to anticipate failure in a task and therefore to concentrate on creating behavioural excuses for it instead of formulating task-oriented plans" (p. 189).These behavioural excuses, Seifert (2004) explains, may be created by students to protect their perceptions of competency, because if they can convince themselves that they could have done well, they will be able to maintain some feeling of self-worth or dignity. The classic example is one in which a student is faced with a test that on opening s/he instantly realises will be quite difficult. The student then engages in distracted behaviour, fools around and ends up failing the test.

> Afterwards the teacher admonishes the student by saying that with some effort the student could have passed. This is a highly desirable outcome because the student and the teacher have blamed the failure on lack of effort, leaving the student's perception of competency and self-worth unthreatened. (p. 144)

Rather than facing the possibility of even temporary failure this type of underachiever chooses to avoid any challenge, blame their underachievement on an internal, unstable, controllable variable like immediate effort (Weiner 1979), and thus preserve their self esteem by maintaining an internal dialogue along the lines of *"If I had wanted too, I could have tried harder and passed easily, but I just didn't want to*."

2.11 Conclusion

The reaction to failure, whether it is a learning reaction or a denial, avoidant, accepting or helpless reaction, appears to be a significant characteristic which distinguishes the high achievers from the underachievers. Possibly due to increased personal sensitivity and intensity, the effects of failure appear to be more pronounced for the gifted student than for the non-gifted student. One possible explanation for which is the often limited exposure to failure experienced by some gifted student. As Plucker (2005) puts it in his study of child prodigies:

> When success comes too easily, prodigies are ill prepared for

> what happens when the adoration goes away, their competitors start to catch up and the going gets rough. I don't see anyone teaching these kids about task commitment, about perseverance in the face of social pressures, about how to handle criticism." (p. 48)

The child for whom academic work has always been effortless in the early years of school may well be emotionally unprepared for failure or even temporary setbacks in later years of academic striving. In response to failure in later years at school, this child may react in aberrant ways which while preserving self concept and self esteem may not contribute positively to overall academic achievement and may well be seen by others as behaviours of the gifted underachiever. As Rimm (1987) puts it, some underachieving gifted seem to have magical ideas about attainment due to not having experienced the connection between effort and achievement.

All the models studied in this review make clear connections between certain cognitive or behavioural attributes and achievement in a normal academic setting. The particular attributes characteristic of high and low achieving students differ widely between models but all have one thing in common. The consistent theme running through all models reviewed here is the reaction to failure. In each case this reaction appears to clearly delineate between the high achievers and the underachievers (see Table 2)

The literature reviewed reveals a consistent dichotomy between what might be called *healthy* and *unhealthy* reactions or responses to failure situations. Healthy responses to failure appear to be those that promote effective action:

1. to find the source of or reason for, the failure,
2. to attribute responsibility accurately,
3. to take action to limit subsequent damage from the failure, and to
4. put in place a strategy to limit the possibility of such failure happening again.

This type of reaction could be termed ***failing well.***

Table 2. Responses in Situations of Failure

	Responses in Situations of Failure	
	High Achiever	***Low Achiever***
Resilience/vulnerability (Benard, 1993)	high self-efficacy; learns from mistakes; strength focused	low self-efficacy; overwhelmed by failure; deficit focused
Locus of Control (Rotter, 1966)	*internal* – takes responsibility for failures	*external* – takes no responsibility for failure
Learned Helplessness (Seligman, 1975)	*optimistic explanatory style* – failure is externalised where appropriate but modified by behavioural internality	*pessimistic explanatory style* – failure is internal; stable and global and reinforced by characterological internality
Attribution Theory (Weiner, 1973)	lack of effort; maintaining effective striving in adverse conditions; challenge seeking; learning goals	lack of ability; performance deterioration in adverse conditions; challenge avoiding; performance goals
Mindset Theory (Dweck, 2008)	*Growth* - adaptive, effective remedial action; positive affect in aversive circumstances; incremental intelligence	*Fixed* – self defeating; negative affect in aversive circumstances; helplessness
Behaviour Patterns (1) (Seifert, 2004)	*Mastery* – takes responsibility, learns from mistakes; success and failure are internal, stable, controllable	*Failure avoidance* – takes no responsibility for failure; success and failure are internal, stable, uncontrollable *Learned Helplessness* – everything is failure; takes full responsibility for all failure; failure is internal, stable, uncontrollable *Work Avoidant* – takes no responsibility for failure
Behaviour Patterns (2) (Martin and Marsh 2003)	*Success Oriented* – no fear of failure	*1)Failure Avoidant* – fear of failure: *Overstriver* – achieves to avoid failure; *Defensive Pessimist* – sets low standards *Self Handicapper* – failure is choice or uncontrollable 2) Failure Acceptor – expects failure, is helpless
Specifically Vulnerable Gifted Groups		
Perfectionist	*normal* – accepts strategic failure *self-oriented* – adaptive achievement behaviours	*neurotic* – nothing is ever good enough *socially prescribed* – fear of failure, maladaptive achievement behaviours
Learning Disabled	proactive, accepts weaknesses focuses on strengths	negative, unable to self correct, helpless

The concept of failing well has currency in a number of diverse areas:

- In the information security industry, "A system that *fails badly* is one that fails catastrophically once failure occurs. A single point of failure can thus bring down the whole system. A system that *fails well* is one that compartmentalizes or contains failure" ("Failing Badly" Wikipedia, 2008).
- In clinical practice in the treatment of drug addiction, "A lapse is treated as a problem to solve, not as a treatment failure. Instead the emphasis is on acquiring and strengthening the skill of *failing well*, which involves admitting that drug use has occurred and learning from one's mistakes by conducting a thorough chain analysis and identifying solutions for future use" (Dimeff Linehan & Koerner 2007, p. 152).
- In helping non-profit foundation administrations design or support programmes with high probability of success, "Foundations need to make more of the right kinds of mistakes, they need to learn how to fail well" (Gueron, 2008, p.1).

It appears that the idea of failing well has not yet been recognised in the achievement motivation, resilience or vulnerability literature.

A specific focus on the different strategies used by students in reaction to academic failure has received some attention. Zeidner (1995) identified three key coping strategies in response to failure:

1. problem focused coping – identifying the problem, finding solutions and implementing them
2. emotion focused coping – regulating, reducing or eliminating the emotional stress associated with failure eg, seeking emotional support, denying the importance of an exam etc.
3. avoidance oriented coping – circumventing or avoiding the stressful situation – eg, watching TV, procrastinating, giving up goals.

Interestingly enough, Zeidner found no correlation between any particular coping style and increased academic success. Turner, Husman and Schallert (2002) focused on the emotion of shame, "elicited when college students experience failure at an academic task" (p. 80). They found that the more *shame-prone* students were inclined to make internal, stable and global attributions for failure and suffered from low self-efficacy, high test anxiety and low self-esteem. S*hame-resilient* students on the other hand, were highly motivated, academically competent and perceived a good course grade as being "instrumental to future academic goals" (p. 84). In their study of college students, they found that the shame-resilient students achieved generally better examination results than the *shame-nonresilient* students. Other emotional reactions to failure were explored by Mantzicopoulos (1997) in a study of 187 fourth and fifth grade children. The children were identified as having one of four different coping responses to failure – positive, denial, projection and self-blame. The positive copers were found to have less negative affect following failure, to attribute failure to unstable factors, to have higher perceptions of competence and an intrinsic orientation to success. The self blamers on the other hand had more negative affect after failure, more self-derogation and experienced a sense of helplessness.

Internal dialogue, or how one explains the world to oneself, plays a vital role in both revealing assumed causality and influencing behaviour in most of the models studied in this review, and nowhere more significantly than in response to failure. Self-derogation or negative self-talk plays a significant role in all the theories tabled, especially with regards to what I have termed *failing badly*. It is in finding effective strategies that play the opposite role and help develop the capacity to *fail well* that the essence of resilience as described in this study may be found.

One such approach is described by Neff, Hsieh and Dejitterat (2005) in a paper called *Self-compassion – a way to conceptualise healthy self-attitudes*:

> Self-compassion involves being open to and aware of one's own suffering, offering kindness and understanding towards

> oneself, desiring the self's wellbeing, taking a non-judgemental attitude towards one's inadequacies and failures and framing one's experience in the light of the common human experience. (p. 264)

In two studies of 436 undergraduate students, self-compassion was found to be significantly positively correlated with mastery goals, intrinsic motivation and perceived competence, and significantly negatively correlated with performance approach goals, performance avoidance goals, fear of failure and anxiety. The self-compassionate student was found to be significantly more resilient in the face of failure than other students.

> These findings help confirm the idea that because self-compassionate individuals are kinder to themselves when they fail, are more aware that failure is part of the common human experience, and are more mindful of their negative emotions, they are more able to see failure experiences as a chance to learn and grow rather than becoming consumed with fear about what a negative performance says about their self-worth. This resilience allows for the adoption of more adaptive academic achievement goals. (p. 282)

Self compassion appears to hold within it the essence of resilience and possibly one of the keys to **failing well**.

CHAPTER THREE

Methodology

3.0 Introduction

The aim of this study was to determine if a relationship existed between the resilience of individual gifted students and their academic achievement. Resilience was estimated from the analysis of an individuals' reactions, whether assumed, considered or remembered, to situations both real and hypothetical. The data were gathered in two parts. In part one, each student's reaction to hypothetical situations was sought through the use of questionnaires. These determined their orientation with respect to models of Locus Of Control (LOC) and Learned Helplessness (LH). In part two the student's perceptions of, and reactions to, real situations from their own life were sought through structured interviews utilising open ended questions. The situations chosen for reflecting upon, in both parts of the study, were those of perceived success or failure, either through an individual's own actions, through good or bad luck or purely by random chance. Each student's responses were then analysed for affective, cognitive and behavioural elements of resilience and patterns of response and variations between students were noted.

3.1 Rationale

The research undertaken in this study sought to describe and compare students' responses to perceived success and failure in achievement situations. Rather than study the nature of the success or failure itself the researcher was primarily interested in the reaction of the students, their interpretations, causal connections, beliefs and responses in situations of success and failure. Of particular interest were any individual patterns of responding and any differences in response between students that might emerge. The overall research approach chosen is somewhat phenomenographic, with a mixed method structure of data gathering and analysis. Phenomenography seeks variation in the ways in which people understand, interpret or experience a particular phenomenon. Phenomenographic research attempts to describe, analyse and understand the ways people experience aspects of the world

and the meaning that they ascribe to significant phenomena (Marton, 1981). Congruent patterns of experience can be expressed as conceptions that depict the internal relations between the individual and the phenomenon, in this case the experiences of success and failure.

3.2 Phenomenography

According to Marton (1981), phenomenography was first recognised as a research approach in the 1970's at the University of Gothenberg. Rather than focus on *how* or *why* people learn, the phenomenographic approach was to study *what* they learned. This distinction still differentiates this method from other qualitative research approaches today. Through a focus on the question of *what*, phenomenography attempts to capture the "qualitatively different ways in which people experience or think about various phenomena" (Marton, 1986, p.31).

A somewhat similar approach to investigating participants' own experiences is the much older research tradition of phenomenology. The two are related but not the same, as alluded to by Svensson (1997):

> From a historical point of view, phenomenography was not developed on the basis of phenomenological philosophy and, although there are fundamental similarities between phenomenography and phenomenology, it is also problematic to totally include phenomenography as part of the phenomenological tradition. (p13)

One of the similarities between the two approaches is a focus on the way in which people represent their situations and experiences through words, in a narrative or descriptive manner (Sandberg, 1997). One significant distinction between the two approaches is that while phenomenology attempts to describe reality, or the nature or essence of particular phenomenon, phenomenography is concerned with describing a participant's experiences of that phenomenon. Martin (1981)

distinguished between phenomenology being a first-order perspective in which the investigator is observing and making comment on reality itself, and phenomenography as being a second order perspective, where it is the concepts and thinking of the participant in response to reality which are the focus of investigation.

The main aim of this study was to use the phenomenon of achievement in an academic context as the focal point for an investigation of students' resilience, with respect to success and failure. The students chosen were all classified by their school as gifted and were differentiated by their teachers, into two groups on the basis of their academic performance, as either high achievers or underachievers. The students' descriptions of, and reactions to, experiences of success and failure both real and hypothetical, were explored looking for any patterns of commonality or differences. It is in this sense that the study can be considered phenomenographic. Evidence was sought from students' responses to both closed and open questions, in questionnaire and interview formats, as to the causality they attributed for success and failure and as to their coping and recovery mechanisms.

In the first part of the study limited choice data were recovered from questionnaires which place each student in a conceptual space bounded by nominal scales of Locus of Control and Learned Helplessness. This phase established bi-polar co-ordinates for each student in terms of resilience/vulnerability orientations. From studying the distribution of students' coordinates across the conceptual space a selection of students was then made for the interview phase. Students were selected to represent a broad cross section of resilience/vulnerability positions and both achievers and underachievers with respect to their recent examination results. The second part of the study involved standardised open-ended interviews which allowed for open reflection upon the concept of achievement with particular focus on the twin phenomenon of success and failure.

3.3 Self-Perception, Expectancy and Attribution

The qualitative analysis of reflective interview transcripts involves the interpretation of perceptions and attributions. One key factor in the development of resiliency is *self-efficacy* (Bandura, 1977), described as "People's judgements of their capabilities to organise and execute courses of action required to attain designated types of performances" (Bandura, 1986, p 391). Research in this field shows that perceived self-efficacy is often an accurate predictor of performance in as diverse areas as social skills, sports, sales, health and academic performance (Fullin & Mills, 1995; Schunk, 1991). Perceived self-efficacy, according to Bandura (1977), is situationally dependent and will influence an individual to avoid activities towards which they feel low efficacy and to participate readily in activities for which they feel they have high efficacy. One difficulty with this idea lies in the accuracy of self assessment of efficacy between different people, for example in an educational setting between *gifted* and *average* students. Average students have been found to attribute to themselves a more unrealistically positive bias in self–efficacy when faced with challenging tasks than gifted students who more accurately judge their efficacy based on the actual difficulty of the task they are facing and consequently have been found to be better at predicting their actual performance (Dai et al., 1998).

An individual's perceived self-efficacy in an educational setting, along with self esteem, self confidence and the more global *self-concept* are the outcome of a process of self evaluation with respect to actual performance as measured by assessment results, and expected performance in living up to the standards set by the expectations of parents, teachers and peers. It is in the interpretation made by the individual of their own self-efficacy with respect to past academic outcomes which appears to directly affect their choice of activities, their effort and their persistence in future academic tasks (Schunk 1991).

One concern of this study was to compare the students' own expectations with the expectations of their teachers and with their actual academic performance in

examination situations. Self assessments of efficacy were also compared with actions taken in regard to work completion, persistence, self-motivation and application of study skills, especially in response to any perceived or actual academic setbacks or failures.

Gifted students in comparison to average ability students have been found to perceive themselves as more academically efficacious, curious, interested and challenge seeking with a higher preference for independent learning (Gottfried & Gottfried, 1996). They have been found to have more positive academic self concepts (Hoge & Renzulli, 1993) and to have greater confidence in their own personal control over successes or failures in school tasks (Chan 1996). These and other similar results suggest a causal relationship between perceived efficacy and motivation in gifted students, but do not establish a direct link between perceived self-efficacy and actual performance in academic achievement. Pajares (1996) found that maths self-efficacy in gifted students was a good predictor of maths performance and Bandura (1989) thought that self-efficacy positively influenced achievement behaviour. Schunk (1991) however, pointed out that necessary skills, expectations, experiences of failure, and the perceived value of outcomes may be complicating factors which disrupt a connection between high self efficacy and high academic performance.

McMillan & Reed (1994), in studies of at-risk middle and high school students, found a combination of high intrinsic motivation and an internal LOC characterised the more successful, resilient students. These students had a strong sense of self efficacy and saw themselves as being successful because they had chosen to be so and had put in the necessary effort. They had clear, realistic goals were optimistic about their future and took personal responsibility for both their successes and their failures. Wayman's (2002) study of 1071 *dropouts* who returned to school found the most significant personal factors associated with educational resilience to be a clear sense of purpose, a willingness to work hard, healthy self-concept, optimism, a positive attitude and the ability to avoid internalising negative messages. Wayman

found that expectancy or the student's own beliefs about the possibility of success for them was predictive of returning for a degree, over and above other measures like grade point average and achievement in test scores. "Students who believe they will obtain a diploma are more likely to do so" (p. 177).

This study looks less at academic motivation as such, and more at the influence of personal expectancy on the development of resilience in an educational context.

One way of exploring the connections between perceived and actual resilience, self-efficacy and academic performance is to look at the attributions students make as to the causes of their successes and failures in the school setting. Using personal attributions to indicate perceived causality has a long history in social-cognitive research (Rotter 1966, Weiner 1979, Dweck 1975, Seligman 1975). Many instruments are available which examine an individuals attributions in an attempt to discover causality and beliefs with respect to resilience but no *industry standard* has yet appeared.

3.4 Resilience Measurement

In the literature the measurement of resilience has mostly been undertaken with children and has generally sought to identify two key capabilities. The first is the ability to *resist stress*, as seen in children exhibiting competent functioning despite the presence of adversity. The second is the ability to *recover well from trauma,* as in children developing the strategic capacity to better cope with subsequent difficulties after exposure to adversity (Lawford & Eiser, 2001). Werner and Smith (1982) were among the first to try and specifically measure resilience development in their study of nearly 700 disadvantaged children over 32 years. To do this they used a group of psychometric testing instruments including *Rotter's LOC Scale*, *California Psychological Inventory (CPI), Socialization Scale, EAS Temperament Scale for Adults*, and the *Cattell IQ test*. They concluded that the majority of people have the capacity to overcome adversity and lead happy fulfilling lives. This has subsequently been criticised as an example of over-pathologising conditions of *risk*

(Almedom & Glandon, 2007), but may also be due to the lack of an effective instrument to measure the particular variable they were studying, namely resilience.

Wagnild & Young (1993) created their *Resilience Scale* (RS) to measure what they described as *emotional stamina*, which they claimed was a characteristic of people who display courage and adaptability in response to misfortune. The RS was developed for a study of 24 older women who had recovered well after major trauma and has been used many times by various researchers since, however almost always with adults and mostly in the investigation of people recovering from serious disadvantage. Almedom et al. (2007) examined several instruments that have been created to measure some facet of resilience, Cederblad, Dahlin, Hagnell and Hansson's *Sense of Coherence Scale*; Friborg, Hjemdal, Rosenvinge and Martinussen's *Resilience Scale for Adults*; the *Connor and Davidson Resilience Scale* (CD-RISC); and compared them (mostly unfavourably) with their own *Sense of Coherence* (SOC) Scale. Yu & Zhang (2007) looked at the suitability of using Connor and Davidson's CD-RISC scale with 50 adults in Guandong province of China and found that once they had removed the *Spirituality* and *Control* sections so the survey focused only on *Tenacity*, *Strength* and *Optimism*, the instrument was "reliable and valid in measuring the resilience construct in Chinese society" (p. 27).

In a similar vein Ahern, Kiehl, Sole & Byers (2006) compared instruments aiming to find the one most suitable for the study of resilience in adolescents. In comparing Baruth & Carroll's BPFI, Connor Davidson's CD-RISK, Friborg et al's RSA, Oshio, Kaneko, Nagamine & Nakaya's ARS, Sinclair & Wallston's BRCS, and Wagnild et al's RS instuments, they concluded that the Resilience Scale (RS) of Wagnild and Young (1993) was the most appropriate for their purposes. Although they chose the RS, Ahern et al. also criticised it for being unclear as to the dimensionality of the resilience construct, and for difficulties in scoring and a lack of reverse scoring items leading to a risk for rating bias. Hunter and Chandler (1999) used the RS with adolescents from very difficult backgrounds and found that it discriminated towards disconnection, isolation and insulation as being the

characteristics of resilience and were left wondering if resilience was, in fact, a particularly healthy state after all.

From the evidence it would appear that there is no clear consensus in the research community on resilience measuring instruments. As the theoretical constructs most commonly referred to in the resilience literature are Locus of Control and Learned Helplessness theory (Kobasa, 1979; Werner & Smith, 2001; Benard, 1993; McMillan & Reed 1994; Connell, Spencer & Aber, 1994; Bastian, 2003; Gardynik & McDonald, 2005) the decision was taken to utilise measurement instruments designed by the two key theorists, Rotter (1966) and Seligman (1975) to ascertain the scale of these two key dimensions of resilience and then to combine the two measurements into a global measure of resilience/vulnerability.

3.5 Questionnaire Design

In this study the causes attributed by gifted high achieving and gifted under-achieving students for their own successes and failures were investigated using two methods. First, their orientations with regards Locus of Control (internal or external) and Learned Helplessness (optimistic or pessimistic) were ascertained by analysis of their responses to two questionnaires (see Appendices 1 & 2). The purpose of which was to place each student in one of four groups, Internal LOC/Optimistic, Internal LOC/Pessimistic, External LOC/Optimistic or External LOC/Pessimistic. A group of ten students were then chosen and offered the opportunity to be interviewed. The interview group represented a wide distribution of LOC and LH orientations and included both high achievers and underachievers. The interview sought to gather information on perceived performance in academic and non-academic settings, perceptions about personal efficacy and giftedness and more detail with regards attributions for success and failure (see Appendix 3).

3.5.1 Questionnaire One - Locus Of Control

Many LOC questionnaires exist in the literature, some of which have been created specifically for school age children (Nowicki & Strickland, 1973; Lao, 1980), and

some which seek to orient towards more academically able students (Crandall, Crandall and Katovsky, 1965). Those reviewed all referred back to Rotter's (1966) original questionnaire and all were found to be dated in terms of their language and to contain geographic and cultural idiosyncrasies which would make them unsuitable for New Zealand students in 2008. For the purposes of this study, it was decided to create a unique LOC questionnaire modelled on Rotter's (1966) original 13 point survey instrument. Content validity was maintained by including all the topic questions Rotter originally used, brought up to date in terms of language and reference points and modified for New Zealand secondary school students. Construct validity was maintained by using Rotter's original forced choice, dichotomous, closed question structure. Students were requested to make a choice between two personal statements, for example:

a) What is going to happen will happen

and b) What I make happen will happen

or a choice between two global statements, for example:

a) the average citizen can have an influence in government decisions

b) this country is run by a few people in power and there is virtually nothing any one person can do about it

Each question required the student to make a choice between two answers, one which suggests the individual has some control or influence over outcomes and one which suggests s/he does not. Questions were also included to relate to a student's own situation, for example:

a) There is a direct connection between how hard I study and the grades I get

b) The grades I get don't seem to be connected to the effort I put in

Some of Rotter's original questions were kept intact, others were altered and three more were added. The final questionnaire had 16 LOC questions in total and the sequence of questions was randomised to ensure there was no pattern in answers attributable to internal or external LOC (see Appendix 2).

As Cohen, Manion & Morrison (2004) point out, this type of questionnaire is useful because it compels respondents to make a decision on an issue but it also has drawbacks in that it is difficult to determine the accuracy of the response in representing the respondent's opinion because for some questions the respondent might have preferred an answer in between or quite different from those provided. In this context it was judged to be valid as a consistent test applied to all respondents which will rate them in comparison with each other as to their comparative LOC, rather than as an absolute measure of LOC.

3.5.2 Questionnaire Two – Learned Helplessness.

Different people react in different ways to situations of failure or bad luck – some people bounce back immediately others stay helpless for a long time – hours, days weeks. Seligman described the key difference between people's reactions as due to their *explanatory style*, which was the characteristic way they explained to themselves why events happened to them, especially uncontrollable aversive events. Attributions for the causes of good and bad luck determine whether an individual is a more optimistic thinker, and therefore not susceptible to learned helplessness, or a more pessimistic thinker and thus susceptible to learned helplessness (Seligman, Reivich, Jaycox & Gilham, 1995).

People with a *pessimistic explanatory style* take a bad event and, in their mind, make it personal, pervasive and permanent and thus remain helpless for a long time. People with an *optimistic explanatory style* on the other hand explain bad events to themselves as being more impersonal, specific and temporary and thus recover from any helplessness immediately. In situations of success or good luck the opposite reaction appears to be prevalent. The more pessimistic thinker makes a good event or good luck, temporary, specific and outside themselves whereas the more optimistic thinker attributes more permanence, pervasiveness and personal influence to good luck or other good events (See Table 3). By determining a person's reactions and attributions in response to hypothetical situations of good or bad luck a person's explanatory style can be determined and their susceptibility to

helplessness established (Seligman et al. 1995; Chaput de Saintongue & Dunn, 1998; Wieschenberg, 1994).

Table 3. Optimistic Thinking and Pessimistic Thinking

OPTIMISTIC THINKING	**personal**	**pervasive**	**permanent**	**PESSIMISTIC THINKING**
good luck	*"I caused it"*	*"everything will be like this now"*	*"it will last forever"*	**bad luck**
bad luck	*"someone or something else caused It"*	*"nothing else will be affected"*	*"it is already over"*	**good luck**

In designing a questionnaire to ascertain explanatory style it is very important to make sure that all possible combinations of variables are offered to the student as possible responses. The variables in this case being good/bad luck, permanent/temporary duration, pervasive/specific affect and personal/impersonal influence. Many versions of the *Attributional Style Questionnaire* (ASQ) (Peterson, Semmel, von Baeyer, Abramson, Metalsky & Seligman 1982) are available but it was decided to use the model from *The Optimistic Child* (Seligman et al.1995) as the basis for a questionnaire to use with the students in this study, as it was the most original and generic available. This questionnaire was then modified to bring it up to date and make it suitable for New Zealand students in a secondary school context. Construct validity was maintained by using the format of forced choice, dichotomous, closed questions (as per Seligman's original). Each question proposes

a different hypothetical situation and asks the student to make a choice between two possible personal responses.

For this questionnaire to retain both the content validity of Seligman's original attributional style questionnaire and consistency with Learned Helplessness theory it was necessary to ensure that all combinations of variables were provided for the students' selection. Three questions explored a choice between personal and impersonal attributions for a good luck situation and three for a bad luck situation, for example:

You get lost getting to an acquaintance's house

A) I must have missed a turn

B) My directions must be wrong

Three questions explored a choice between pervasive and point specific attributions for a good luck situation and three for a bad luck situation, for example:

You get a card from someone on St Valentine's Day

A) Somebody likes me

B) People generally like me

Three questions explored a choice between permanent and temporary attributions for a good luck situation and three for a bad luck situation, for example:

All your friends catch a cold except you:

A) I have been healthy lately

B) I am a healthy person

The inclusion of all combinations resulted in a total of 18 questions which were then randomised so that no pattern of responding could be developed.

As with the LOC questionnaire the forced choice format with only two choices does not yield in-depth information and does not represent accurately all the thinking of the respondent on each issue. However, in as much as it is formatted to closely follow the question pattern in Seligman's original test, this questionnaire can be used to give a good comparative gauge of the levels of optimistic or pessimistic thinking between students (see Appendix 1).

3.5.3 Additional Questions

In addition to the LOC and LH questions, fourteen more forced choice questions were included, spread over the two questionnaires. Eight of these questions focused on differentiating the students between performance and mastery goals. For example:

What would be your most likely reason to do some study?

A) To get a good mark

B) To master the subject

Three questions attempted to separate attributions of academic success into either effort or ability. For example:

Which do you enjoy more…?

A) Proving you can do something

B) Improving your ability to do something

Two questions explored the nature of intelligence. For example:

What I think about intelligence is…

A) intelligence is something you can increase by learning more

B) you can learn new things but your intelligence always stays pretty much the same

The last question sought to discern if a student had a tendency towards perfectionism. It was:

When you have a project to complete do you try and do it…?

A. As close to perfect as you think you can get

B. Good enough to satisfy the teacher

(See Appendices 1 & 2)

The factors investigated through these questions are significant in the descriptions of the achievement patterns of Diener & Dweck, (1978); Seifert (2004) and Dweck, (2007). The responses to these questions provided information which could then be compared with academic achievement patterns to see if any correlations existed.

3.6 Trialling

The LOC and LH questionnaires used in this study have been used previously by the researcher with 310 students deemed to be average achievers in secondary schools in New Zealand and in the south of England. In order to simplify the process and to bring together the two scales of measurement in a way students could easily understand the two scales were put together in the following way:

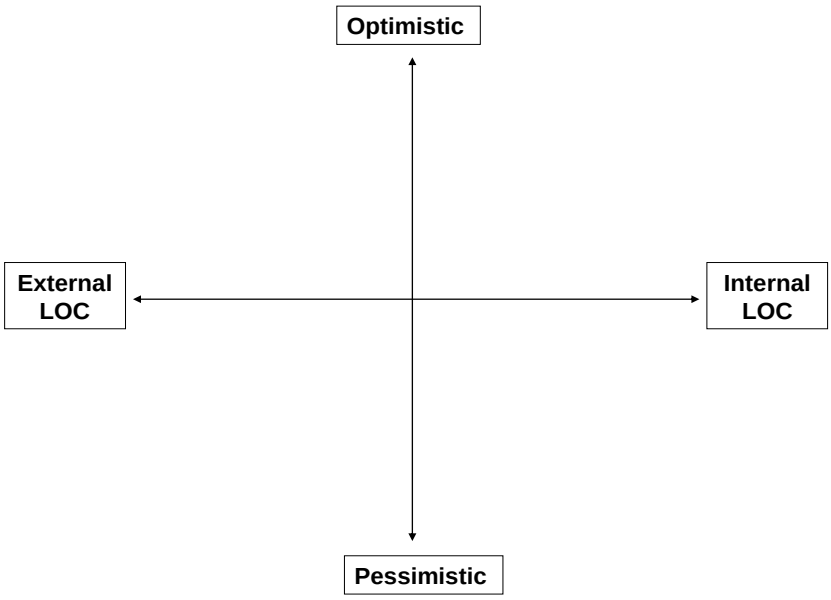

Figure 1. Scales of Locus of Control and Learned Helplessness

This creates a grid pattern with four distinct quadrants – Internal LOC and Optimistic, Internal LOC and Pessimistic, External LOC and Optimistic, and External LOC and Pessimistic (see Figure 2).

Each quadrant was then given a descriptive name relating to the characteristics suggested by the combination of the two scales, as follows:

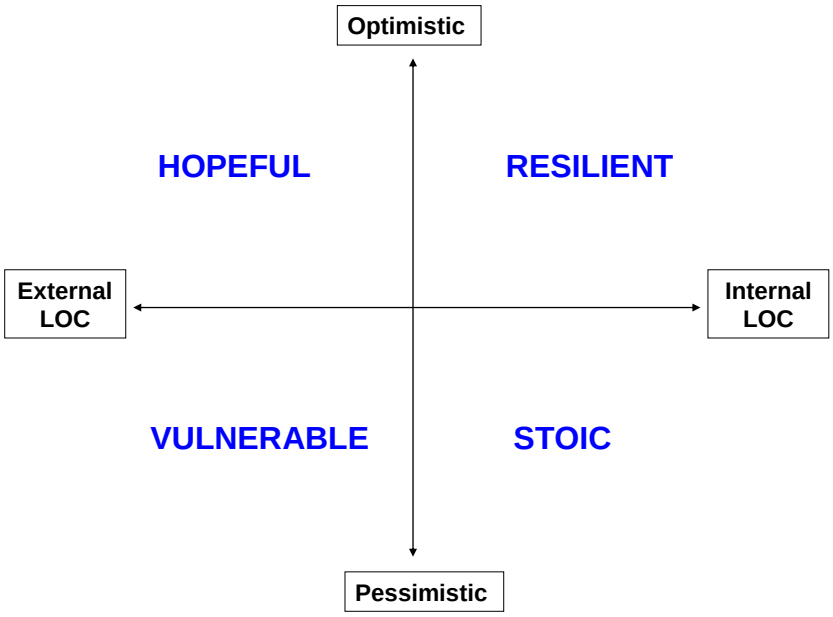

Figure 2 – The Gnostates Grid

This formed an unique conceptual space which was given its own name, the *Gnostate grid*. This enabled the researcher to call the two analytical questionnaires *Gnostates 1* and *Gnostates 2* and deliver them to the students without them being aware of the locus of control and optimism/pessimism focus. This was done to prevent any prior knowledge bias students might have if they have been engaged in LOC or LH analysis before.

In the trialling of this model with 310 students from New Zealand and British state secondary schools the data collected showed the following distribution of responses:

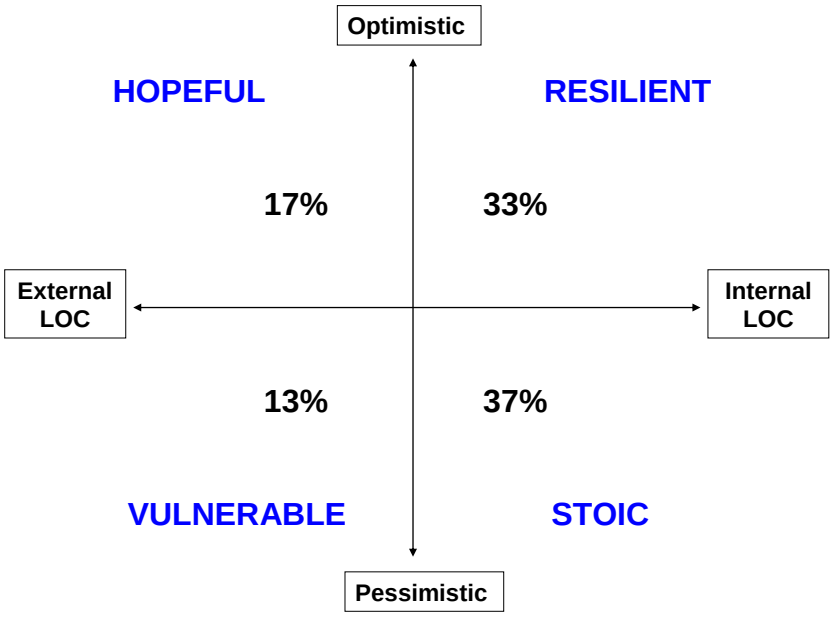

Figure 3. Distribution of Students in Gnostates Trial

3.7 Gifted and Talented Student Selection

In December 2003 schools in New Zealand were notified of the inclusion of gifted and talented students into National Administration Guideline 1 (iii)c (NAG 1). From that time onward, school boards were required "through their principal and staff, to use good quality assessment information to identify students who have special needs (including G-T students), and to develop and implement teaching and learning strategies to meet the needs of these students" (Education Review Office, 2008).

At Hamilton College the processes for identifying the G-T students and implementing suitable teaching and learning strategies to meet the needs of this group and satisfy NAG 1 are as follows:

1. Prior to entry to Hamilton College in Year 9, all students undergo Canterbury Educational Management Testing in Year 8 in the subjects of:

    a) English, with topics covering vocabulary, comprehension and exploring language

b) Mathematics, with topics covering number, measurement, geometry, pre-algebra, algebra, statistics, probability, simple problem solving and logic extension, and
c) Reasoning, with topics covering verbal association, verbal classification, verbal analogies, letter series, verbal reasoning, verbal codes, logical conclusions, numerical reasoning, number codes, number analogies, abstract pairs, abstract classifications and abstract sequences.

2. Before entering Hamilton College, self nomination, parent nomination and data from contributing schools is scrutinised by the admitting teachers.

3. An information evening is then held for all students, and their parents, interested in joining the enrichment and extension programme (EEP).

The composition of the EEP group is decided on by the admitting teachers and the Year 9 EEP group is then formed. The EEP students attend normal classes but are involved in some extension activities as well. For example, a three day learning retreat is held off campus in Term three of the students' Year 9 year, where aspects of thinking, learning and the experience of being gifted are explored.

From the EEP group two classes are established in Year 9 for whom more curriculum options are made available in the last two terms than are available for the other Year 9 classes.

From these two EEP based classes, by self selection and using input from teachers, one *options* class at Year 10 is formed. The Year 10 options class then has available to it opportunities for extension studies. Students can choose from a range of possibilities not offered to the general Year 10 students like the opportunity to study NCEA Level 1 or Level 2 music, art and mathematics; the secondary futures project, an autonomous self study project, special classes in philosophy, and other opportunities mostly dependent on their own interests and particular talents.

At Year 11 one class (called *11/6*) is formed by self nomination followed by staff selection. In this class students do six academic subjects plus physical education. They have reduced hours in mathematics, English and the sciences through a compacted curriculum to free up time needed for the additional subjects. At this level some students may have the opportunity to begin study for Cambridge (CIE) qualifications.

At Year 12 the more advanced students are studying for the Cambridge International Examinations and may start studying for New Zealand Scholarship exams.

At Year 13 the emphasis for the advanced students is on Scholarship and some students may participate in studying Chemistry at Stage 1 university level at The University of Waikato.

3.8 Sample Selection

The core of this study is a comparison of responses from underachieving and high achieving gifted students. Initially the best people to make that selection were considered to be the students' subject teachers in consultation with the teacher in charge of the EEP programme who was also the Gifted and Talented Education (GATE) coordinator for the school. They were the ones who were familiar with each student's history in the gifted and talented group and had the evidence of their own assessments. Teachers across the school, from Years 9-13, were asked to nominate students who would fit either of the following two categories:

1. students who were achieving at a particularly high level in relation to others in the class and in relation to what the teacher would normally expect of a student of this age
2. students who the teachers believed had the potential to achieve at a particularly high level (as above) but who were not doing so, that is, students who were underachieving.

The teachers selected 49 students, 35 in category (1) and 12 in category (2). Due to the stringent entry criteria the G-T group of students were mostly diligent, hard working, high achieving students and therefore a ratio of nearly 3:1 high achievers to underachievers was considered to be representative of the group. The students came from all year groups with 10 from Year 9, 16 from Year 10, nine from Year 11, 10 from Year 12 and four from Year 13. No communication with the students selected was made by the teachers at this point.

All students selected were then informed by letter as to the nature of the project and informed consent to the research was sought from the principal, the co-ordinating teacher, the students themselves and from their parents (see Appendices 4, 5 & 6). At no time were the students informed as to whether they were in the high achiever or underachiever group and the research was presented as a study of resilience and success of gifted students without the distinction between the two achievement groups being overtly stated.

Out of the initial group of 49 students, 37 indicated their interest in being involved and completed all informed consent procedures for themselves and from their parents. In this final group of 37, seven students were from Year 9, 12 from Year 10, eight from Year 11, eight from Year 12 and two from Year 13. This gave the study a spread of students across all years of high school. Of those 37 students, 26 had been initially identified by their teachers as high achievers and 11 had been identified as underachievers.

3.9 Research Implementation

The researcher liaised with the GATE coordinator at Hamilton College, who was then able to pass messages directly to the students involved in the study. One lunch-time classroom session was set up to complete the two questionnaires. The two questionnaires were given non-attributable names (Gnostates 1 and 2) to avoid any prior knowledge or expectation bias. Most of the students arrived as requested and the two questionnaires were competed within 20 minutes. Interestingly, and to be

expected on reflection, the students who did not turn up were all from the underachiever group. After numerous requests and re-visits to the school, all the under-achieving group also completed the questionnaires as requested.

By the time all the questionnaires had been completed, the students had sat their major end of year examinations and the results were available for analysis. All students in the study passed their examinations but across the group there was a wide range of achievement levels (see greater detail in the Results and Discussion section). The researcher did not have access to the students' academic records due to privacy considerations but the GATE Coordinator was able to view the students grades. The GATE Coordinator was then able to classify each student's academic performance as being at either the *exceptional*, *above-average* or *average* level. Those who achieved exceptional grades were then deemed to be the *high achievers*, those with above-average grades were the *achievers* and those with average grades were judged to be underperforming and were deemed to be the *underachievers*.

This result gave the researcher two different judgements of student performance. The first was the expectation and experience of the teachers and GATE Coordinator at the beginning of the study, who differentiated the students into high achievers and underachievers on the basis of their own previous past knowledge. The second judgement was of their academic grades achieved in the 2007 end of year examinations. These grades gave a practical demonstration of which students were achieving at a high level and which students were underachieving.

A group of ten students were then selected for interview, based on both the results of the LOC and Optimism/Pessimism analysis and their actual exam results. The students with the most extreme measures of LOC and LH were of interest, in order to try and amplify the differences between them to make any pattern in those differences more obvious to the researcher. Also of interest were the students who achieved at the highest level in their examinations and those that underachieved. Five pairs of students were found, each pair having two students with virtually

matched LOC and LH scores where one student achieved at the highest level and the other underachieved in their recent examinations. These 10 students were then invited to be interviewed and all accepted the invitation.

Comparing the students examination achievements with their teachers' original estimations of their performance it was also found that within the ten students making up the five pairs for interview were:

- four originally designated underachievers who had performed poorly in their exams
- four originally designated high achievers who had performed well in their exams.
- one originally designated underachiever who had performed well in the exams
- one originally designated high achiever who had performed only adequately in the exams.

This information provided another lens through which the data could be viewed with regards expectancy and performance.

Interview schedules were developed to enable interviews of each student to take place individually, utilising the same format and questions each time (see Appendix 3).

Once again, all of the original high achiever group kept to the interview schedule and were prompt and accurate in attendance, whereas some of the original underachievers did not turn up to the interview or were late or came on the wrong day. Eventually all 12 interviews were completed. All interviews were taped, transcribed within one day and sent back to the students for verification, signing and returning to the researcher. All were returned successfully, signed, a few had small changes made but mostly were returned unchanged. The last to return, requiring several follow-up reminder calls, were from the original underachievers who had performed at the underachiever level in their end of year exams.

3.10 Interview Design

Cohen et al. (2000) report that the achievement of validity and reliability of information in an interview situation is a persistent problem throughout qualitative research. Possible sources of bias include attitudes, expectations and opinions of the interviewer, differences in levels of rapport established in each interview and the wording, emphasis and tone used for questions with different interviewees. If the interviewer is also the primary researcher, there may also be a tendency to seek answers which satisfy the research direction being explored and there is always potential for misunderstandings and misinterpretations by both the interviewer and interviewee. In addition any changes in format, structure, timing, location or interviewing personnel may well introduce unplanned change in response between participants. Silverman, reported in Cohen et al (2000), suggested that one way of controlling for reliability in an interview situation is to have a "highly structured interview, with the same format and sequence of words and questions for each respondent" (p. 121) but then also argued for the importance of open ended and unstructured interviews to draw out the respondent's unique world view.

In order to address these concerns the interviews in this study were all conducted at the same time of day, in the same place in the school, by the same interviewer. The interviewer attempted to alleviate any reticence some students might feel in being interviewed by a teacher or other authority figure by dressing more casually than the standard teacher, by addressing the students by name and by making the interview as informal as possible. The instructions to each respondent were identical, the room set-up was the same each time and each interview lasted approximately the same amount of time. A list of set questions was established and each respondent was asked all of the set questions but not necessarily using exactly the same words. In order to establish rapport to help the interview flow and to help the interviewee feel at ease sometimes the language used by the interviewer in asking the questions was made more appropriate for the interviewee and more as a response to the previous answer than a formal set question. All questions were covered in each interview.

The set questions sought to find out:

1. how the students perceived their academic success to date and what they attributed as the causes of their present performance
2. how they felt about being labelled gifted and any consequences for them in their lives from such a label
3. what they considered to be success and failure in a general sense and the causes for both
4. how they approached planning out the quality of their own schoolwork
5. what strategies they had for recovering from negative emotional states
6. their greatest long term goals and fears (see Appendix 3)

In asking each question the interviewer was very aware of giving the students enough time to consider and develop their own answers without prompting. Clarification questions as well as summary's and feedback were used by the interviewer to verify the student's position or to obtain clearer answers or more detail on any of the key points. After the interview, all transcripts were typed up verbatim within 24 hours and mailed back to each respondent with instructions to read, make any changes of incorrect statements or add any information to better represent their point of view. They were then asked to sign the resulting transcript as an accurate representation and mail back to the researcher in the supplied pre-paid envelope.

3.11 Ecological Validity

The difficulties experienced in obtaining information from the gifted under-achievers highlights the problem of maintaining ecological validity when studying this particular group. A basic premise of qualitative, naturalistic research is that the researcher does not deliberately manipulate conditions or variables and that the situation of the research study is one that would occur naturally, even if the researcher was not present (Cohen et al. 2000). Based on dialogue with teachers and from observation of the students themselves, it was clear that the high achieving gifted students were much more likely to turn up for appointments on time, and to

complete fully tasks that were asked of them, than were the underachievers. The researcher was then left with the dilemma of trying to preserve ecological validity while at the same time get all the selected students to complete the questionnaires and turn up on time for the interviews. If the underachieving students did not make themselves available and complete the tasks required, then the study risked being left unable to complete its objective of comparing data from achieving and underachieving gifted students. As it turned out, the school took responsibility for the students' participation and there were many systems within the school to get all the selected students to attend and complete required work.

3.12 Analysis

The use of forced choice questionnaires combined with structured interviews allowed for both the gathering of fixed data points and data from narrative. From the questionnaire responses came information to compare with the published LOC and LH research discussed in the literature review. From this theoretical point of view comparisons were then able to be made between predicted and actual academic performance. From the interviews came recorded narrative which revealed something of each student's reactions to success and failure situations in their own lives. Of particular interest were the students' perceptions with regards causality and consequences of successes and failures, as well as subsequent actions taken and strategies for recovery or reinforcement. The strength of the phenomenographic approach is that it specifically looks for differences between individual's responses to phenomenon rather than necessarily interpreting those responses with respect to any model. Analysis of the interview information revealed individual approaches to success and failure and allowed for the recognition of any patterns of response. Differences in response were then looked for between the high academic achiever group and the underachiever group to see if any correlations existed.

CHAPTER FOUR

Results and Discussion

4.0 Introduction

This chapter addresses the results obtained from both Part 1 and Part 2 of this study. Part 1 used forced choice questionnaires (see Appendix 1 & 2) to determine each student's relative measures of Locus of Control (LOC) and Learned Helplessness (LH) orientations as well as their beliefs regarding academic goals, the importance of effort, the malleability of intelligence, and their tendency towards perfectionism. Examination performance data was also obtained for each student and an investigation undertaken to determine any relationships between the different data streams. Part 1 also established a set of co-ordinates for each student, which located them within a conceptual space related to their estimated levels of resilience or vulnerability. In Part 2, these co-ordinates were used to select a group of students for standardised interviews which allowed for reflection upon the concept of achievement, with particular focus on the twin phenomena of success and failure. The data collected in Part 2 were more phenomenographic in nature and were examined for similarities, differences and patterns of response. Responses from high academic achievers were compared with those of underachievers to determine if there were any consistent differences in interpretation of personal success and failure.

4.1 Part 1

4.1.1 Locus of Control Questionnaire

The results of the LOC questionnaire can be seen in Figure 4. The limits of the scale of LOC were determined by all possible answers to the 16 questions in the forced choice questionnaire. The scale ran from negative eight being maximum externality of LOC to positive eight being maximum internality of LOC. If a student chose only the internal LOC answers to all 16 questions, then this would yield a score of eight, if they chose only the external LOC answers then they would yield a score of negative eight. If a student selected exactly half internal and half external LOC

answers then they would yield a score of zero which was considered to be neutral with regards to LOC, being equally balanced between internal and external orientations.

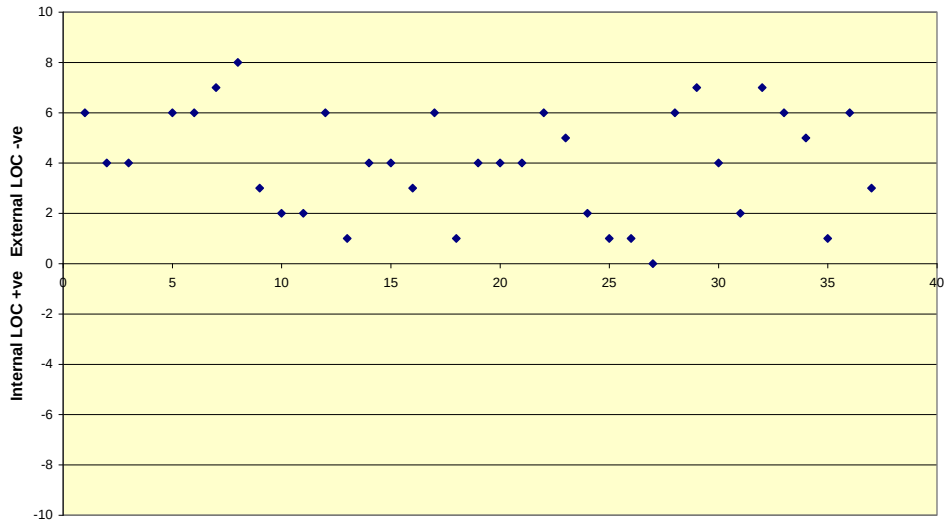

Figure 4. Locus of Control Scores for Each Student

All the 37 gifted students in the sample were found to have LOC scores placing them between zero (neutral LOC) and eight (maximum internality of LOC). Not one of the gifted students registered an LOC score on the external side of the scale, between zero and negative eight. The same questionnaire had previously been trialled by the researcher in the course of his work as an educational consultant, with a population of 310 non-gifted secondary students in two countries. The results from that trial showed that approximately 70% of those students displayed the internal LOC pattern while the other 30% showed signs of externality. The trial result, while not formally confirmed, does make the result from this study look quite different from what might be considered the norm.

Within Hamilton College the method of selection of gifted students, based as it is on general academic performance and achievement on standardised tests, may well bias the sample towards internality in LOC orientations. Academic achievement has been clearly linked with internal LOC in many studies and reviews of the literature

(Prociuk & Breen, 1975; Findley & Cooper, 1983; Kalechstein & Nowicki, 1997; Millar & Irving, 1995; Twenge, Zhang, & Im, 2004) and so it is not surprising that the academically successful gifted students in this sample all show an orientation towards an internal LOC.

The examination achievement data displayed in Figure 5 shows the performance of all the students in this sample in their end of year examinations for each subject at each year level. All students passed all subjects with grades described by their teachers as at the *average*, *above average* or *exceptional* level. None of the students received failing grades at the *below average* or *very poor* levels of achievement.

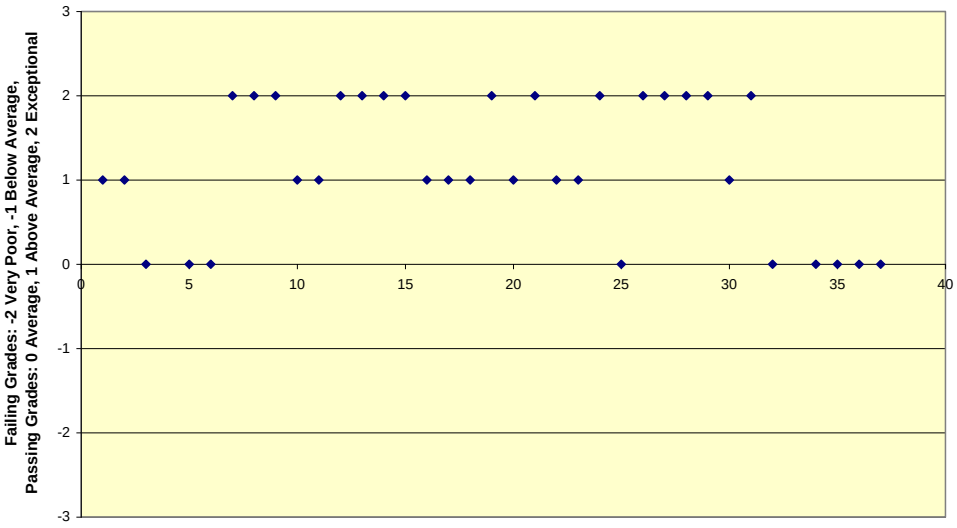

Figure 5. Examination Achievement of Each Student

When teachers were first asked to choose students as possible participants in this study, they were asked to nominate them in two groups, the high achieving gifted and the underachieving gifted. Figure 6 shows the actual achievement of the students as compared with the classification initially given to them by their teachers.

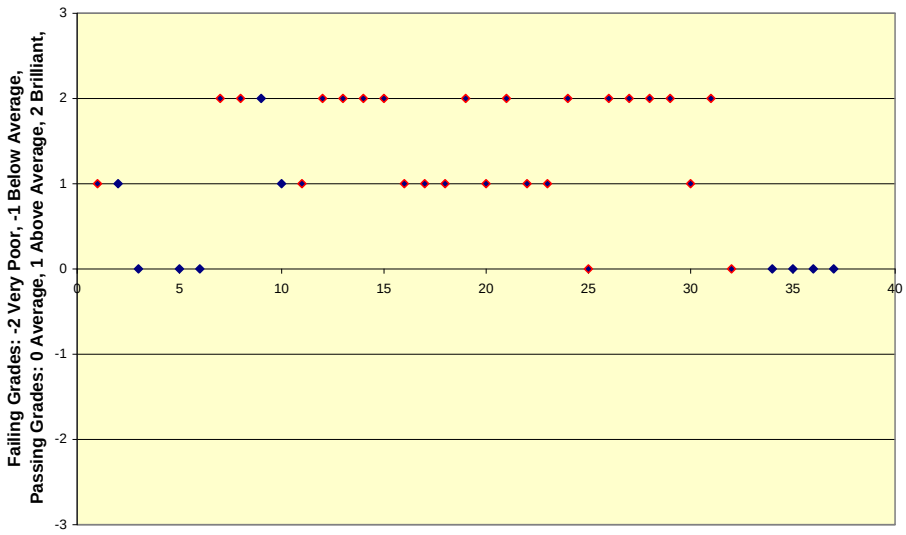

Figure 6. Examination Achievement and Teacher Expectations for Each Student as High Achiever or Underachiever

As can be seen not all students fitted with their teachers' expectations. Of the 37 G-T students in the study, 11 were initially identified by teachers as underachievers. Of these 11 students, one did not sit any examinations due to illness. Of the remaining 10 underachieving students, seven achieved at an average level as expected, but two achieved results at the above average level and one achieved results at the exceptional level. Of the 37 G-T students in the study, 26 were initially identified by teacher as high achievers. Of these 26, 14 achieved at the exceptional level as expected, nine achieved at the above average level and three achieved at the average level. In terms of accuracy of prediction, teachers were found to have an 83% accuracy rate in predicting examination achievement/underachievement in their G-T students.

From this point on, those students who achieved examination results at the exceptional level were considered, in this study, to be in the *high achiever* group; those with examination grades at the above average level were considered to be in the *achiever* group, and those with grades at the average level were considered to be

in the *underachiever* group. In Figure 7 the LOC orientations of the students are compared with their achievement in their end of year examinations. As can be seen, underachievers, achievers and high achievers appear in all parts of the groups' distribution of LOC scores with no obvious pattern emerging. Within the sample however, there is considerable variation between the levels of internal LOC, from neutral to maximum internality, and also variation in the levels of successful academic achievement from high achievement to underachievement.

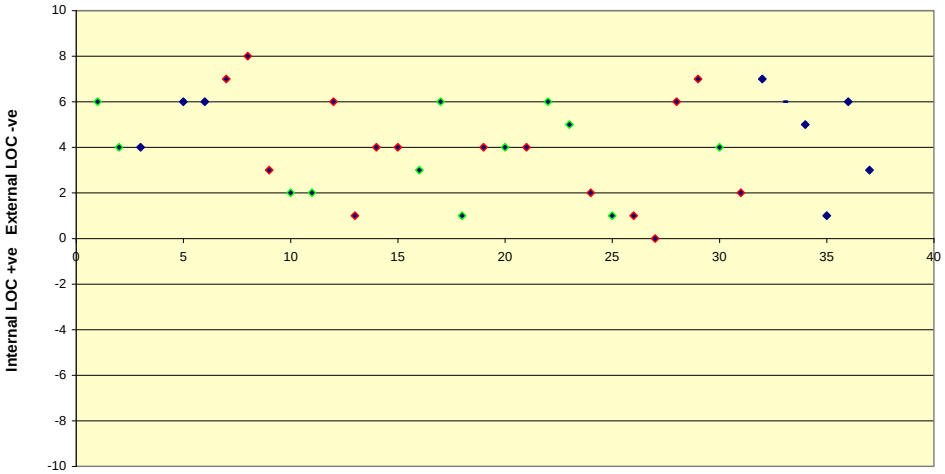

Figure 7. Locus of Control and Examination Achievement:
High achievers, Achievers, Underachievers

Over the whole sample of 36 G-T students who took part in the end of year exams, 28% (10/36) achieved at the average level and were subsequently considered by their teachers and by the researcher, to be underachieving. It must be kept in mind that this does not represent the percentage of all the G-T students at Hamilton College who can be classified as underachievers, as the experimental design for this study specifically asked for both gifted underachievers and gifted high achievers to participate.

The size of the problem of gifted underachievement in New Zealand is difficult to estimate due to a lack of standardisation of definitions and a lack of New Zealand research in this area. However one study of 2000 United States gifted middle school

students found that 37% were averaging C grade or lower and more than half of these students were at risk for dropping out due to low grades and behaviour and/or attendance problems (Seeley, 1993). Peterson and Colangelo, in 1996, reported that the percentage of high ability students who do not achieve well may be as high as 50.

LOC has been related to academic achievement in gifted students by Ford (1993) who found underachievement in gifted students to be characterised by an external LOC. This conclusion was supported by Albaili (2003) who also found that gifted underachievers had a more external LOC, were more ambivalent about trying hard and suffered higher test anxiety, than gifted achievers who had a more internal LOC orientation. The results of this present study do not confirm such a link between external LOC and underachievement however, as representatives of the underachiever group were found across the whole LOC distribution (see Figure 7). Members of the high achievers group were also found at all points of the LOC distribution. If the LOC scores obtained from the students in this study are used comparatively rather than as an absolute measure of LOC it might be expected for a trend to be observed linking reducing internality of LOC scores with reducing academic performance. However in this study, both high achievers and underachievers were found across the whole distribution of internality of LOC scores, from neutral to extreme internality and no such trend was evident.

The results of this study demonstrate a possible link between giftedness and internal LOC as 100% of the G-T students were found to have an LOC score between neutral and highly internal. It seems more likely however that the school policy of selecting G-T students on the basis of academic achievement, effectively pre-selects a sample of students, all with demonstrably internal LOC and with academic achievement at as good or better level than their non-gifted peers. Unfortunately within this study no comparative data from non-gifted students across the school was obtained to enable investigation of this idea.

4.1.2 Learned Helplessness Questionnaire

Some of the personal characteristics observed in underachieving gifted are "low self esteem, perfectionism, procrastination, self-criticism, a feeling of competition where none exists and an unwillingness to take risks" (Fehrenbach, 1993, p. 88); poor personal adjustment to difficulty, weak self control, poor study skills, disabling affective factors (Krouse & Krouse, 1993); disorganization, lack of concentration, perfectionism, low self-esteem, unwillingness to conform, anxiety and vulnerability to peer pressure (Ford, 1993). These characteristics as described have a lot in common with the characteristics described of LH: a feeling of failure, loss of ability to take action, pessimism, inattention, self criticism and self blame, and an inability to persist or persevere (Seligman, 1975; Abramson et al., 1978; Peterson et al., 1992; Diener & Dweck, 1978; Sutherland & Singh, 2004).

The results of the LH questionnaire can be seen in Figure 8. These results show scores of optimism or pessimism which are used as a measure of LH (Seligman et al., 1995). The limits of scores for optimism or pessimism were determined by all possible answers to the 18 LH questions in the forced choice questionnaire. If a student chose the pessimistic answer to every one of the 18 questions they would yield a score of negative nine. Similarly if they chose exclusively optimistic answers to every question they would yield a score of positive nine. A score of zero was considered to be neutral for LH as being evenly balanced between optimism and pessimism with an equal score for each. The scores for the sample group ranged from the very optimistic (positive 5) to the very pessimistic (negative 5) with the majority of the students registering around the X-axis as being either minimally optimistic or minimally pessimistic.

When the data on student achievement is added (see Figure 9) it is clear that both high achievers and underachievers are represented throughout the optimism/pessimism scale.

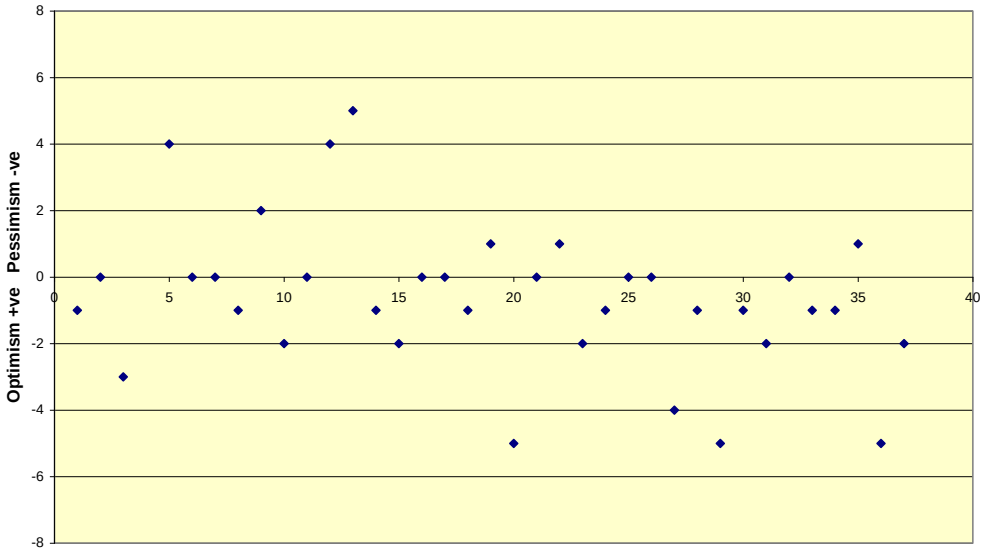

Figure 8. Learned Helplessness Scores for Each Student

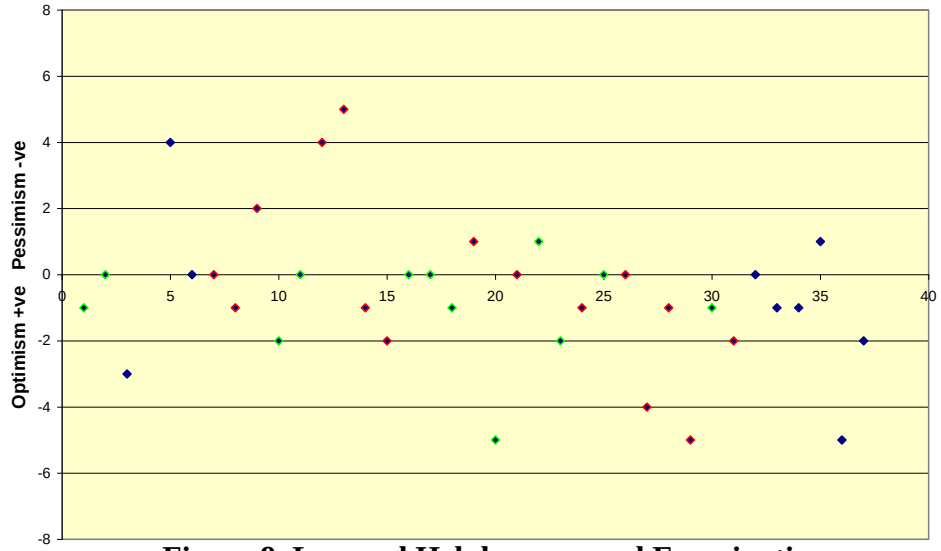

Figure 9. Learned Helplessness and Examination Achievement: High Achievers, Achievers, Underachievers

LH theory and many empirical studies have shown a clear relationship between helplessness and poor academic performance (Peterson & Barrett, 1987; Elliott & Dweck, 1988; Peterson et al., 1992; Chaput de Saintongue & Dunn, 1998) and between a lack of helplessness or the presence of mastery, and high academic achievement (Diener & Dweck, 1978; Ames & Archer, 1988; Fincham et al., 1989; Seifert, 2004). This relationship was not confirmed by the data collected in this study. No discernable trend linking increasing LH with decreasing academic grades was found. High achievers and underachievers were found both among those students with the highest optimism scores and among those with the highest pessimism scores (see Figure 9).

Optimism and pessimism as measures of learned helplessness appear to bear no relationship to academic success in this sample of gifted students. This may be due to either an inaccurate estimation of helplessness or to other complicating factors which override a tendency towards optimism or pessimism. As already noted, all the students in the sample showed an LOC orientation from neutral to highly internal and it may be that the influence of an internal LOC on academic performance is enough to overcome any tendency towards pessimism or associated helplessness.

4.1.3 Goals, Effort, Intelligence and Perfectionism

The additional 14 forced choice questions sought to explore the students' attributions with respect to four important influences on success at school. These were the choices of performance or mastery goals (8 questions), the primacy of effort or ability (3 questions), and the fixed or flexible nature of intelligence (2 questions). In addition, one question sought to discover those student who thought of themselves as perfectionists (see Appendixes 1 & 2). For each influencing factor, the number of students favouring one alternative over the other was ascertained and turned into a percentage of the total response. Trends were then looked for in the responses of the high achievers, achievers and underachievers. The results were as follows:

4.1.3a Academic Goals - Performance or Mastery

The majority of students in all three groups demonstrated a preference for mastery over performance goals (see Table 4). The high achievers showed a more marked orientation towards mastery goals than students in either of the other two groups. Goal attribution theory considers an orientation towards mastery goals as being an important determinant of academic success (Dweck and Elliott, 1983; Ames & Archer, 1988; Elliott & Dweck, 1988; Shunk, 1989; Koestner & Zuckerman, 1994; Archer, 1994; Burley, Turner & Vitulli, 1999). This study however did not find any significant difference between the high achievers and the underachievers in terms of their goal orientations.

Table 4. Goal Preference and Examination Achievement

Students	Goal Preference	
	Performance	Mastery
Underachievers	40%	60%
Achievers	44%	56%
High Achievers	29%	71%

4.1.3b Influence on School Success – Effort or Ability

The majority of students in all three groups attributed academic success to effort rather than to ability (see Table 2). Locating the main cause of achievement in effort rather than in ability has been seen to be a key factor in achievement motivation (Weiner 1973), and an important characteristic of the *mastery style* of Diener & Dweck, (1978), the *mastery pattern* of Seifert (2004) and the *Growth Mindset* of Dweck, (2007). This study however did not find a clear distinction between the high achievers and the underachievers in terms of their attributions of causality for academic success.

Table 5. Influence on Success and Examination Achievement

Students	Influence on Success	
	Ability	Effort
Underachievers	7%	93%
Achievers	23%	77%
High Achievers	10%	90%

4.1.3c The Nature of Intelligence – Fixed or Flexible

The majority of students in all three groups considered the nature of intelligence to be a 'flexible' rather than 'fixed' attribute (see Table 6). The belief in one's intelligence as a malleable and develop-able attribute (incremental theorists) has been found to link strongly with a learning goal orientation, adaptability, openness to new ideas and less helplessness in the face of negative responses. A belief in intelligence as fixed attribute (entity theorists) has been linked with a performance goal orientation, increased helplessness and decreased resilience in the face of adversity (Dweck & Leggett, 1988; Chiu, Dweck, Hong, Lin & Wan, 1999). This study however did not find a clear distinction between the high achievers and the underachievers in terms of their considerations of the nature of intelligence

Table 6. The Nature of Intelligence and Examination Achievement

Students	Intelligence	
	Fixed	Flexible
Underachievers	0%	100%
Achievers	15%	85%
High Achievers	5%	95%

For the three factors discussed above no significant distinction was found between the students classified as underachievers and those classified as high achievers. One reason maybe due to a combination of the nature of dichotomous forced choice questions and the level of understanding of the participants. When faced with a choice between two answers for simple questions about effort, intelligence and

goals, it is reasonable to assume that these G-T students could easily work out which answer fitted the model of the hard working student and which one did not. This may then have suggested to them that there was a *right* answer (one which fitted with the teacher's and the school's explicit work ethic) and a *wrong* answer (one which opposed the same ethic). If so they would then have been left with the decision of choosing the conforming answer or choosing to rebel. The majority of the students, it would appear, chose to appear to fit in with the accepted work ethic. The last question in this group (d) however did not pose such an ethical dilemma for the students as both choices fitted well with a consistent work ethic.

4.1.3d Degree of Completion – Self Reported Perfectionism

The incidence of self-reported perfectionism was found to increase from the underachievers to the achievers to the high achievers. No distinction was attempted within the question to distinguish between normal and neurotic perfectionists (Hamachek, 1978), or between self-oriented and socially prescribed perfectionists (Seigle et al., 1994) and so the data recovered is of limited value. It is interesting however to note that increasing academic achievement was closely related to the increasing incidence of self-reported perfectionism indicating that the perfectionism noted by the students themselves appears to support high academic achievement. Also the finding that the majority of the students in all three groups were self-reported perfectionists corresponds with the view from the literature that G-T children are more likely to be perfectionist than non-gifted children (Buescher & Higham, 1987; Schuler, 2002).

Table 7. Degree of Completion and Examination Achievement

Students	Completion	
	Perfectionist	Non-perfectionist
Underachievers	67%	33%
Achievers	73%	27%
High Achievers	87%	13%

The majority of all three achievement groups of students in the study fitted the high achiever model of setting mastery goals and believing in the power of effort and the flexibility of intelligence. In these three characteristics tested for, these students fitted the mastery style of Diener & Dweck, (1978), the mastery pattern of Seifert (2004) and the Growth Mindset of Dweck, (2007). But approximately one third of these students were academic underachievers. Academic achievement, in this study, can not be linked to a belief in mastery goals over performance goals, effort over ability or flexibility over fixedness in intelligence. One possible explanation for this result could be that the questions asked of the students were not effective enough in sorting the students as planned. Another explanation could be that the majority of the students in the study were very aware of the belief systems under-pinning academic success but were simply choosing not to put those beliefs into practical effect for themselves. The reasons for such a choice could range from laziness to active rebellion but it may be that the element of conscious control or volition plays an important role in these students' academic achievement. This aspect of performance was not something that was explicitly tested for in Part 1 of this study. Part 2 provides more illumination of this topic.

4.1.4 Gnostates

Figure 10 relates the students' LOC scores to their LH scores. The LOC scores are plotted horizontally and the LH scores vertically, to form a conceptual space (called the Gnostates grid) designed to reveal tendencies towards resilience or vulnerability. As all of the students in the study had LOC scores between neutral and highly internal, they all ended up on the right-hand side of the figure. Relating these scores to the Gnostate quadrant descriptors (see Figure 11), the students were found to be distributed across the *Resilient* quadrant (internal LOC + optimism), and the *Stoic* quadrant (internal LOC + pessimism). Anecdotal evidence from the use of the same LOC and LH questionnaires with a population of 310 non-gifted secondary students across two countries has shown distinct and consistent characteristics of students associated with each quadrant.

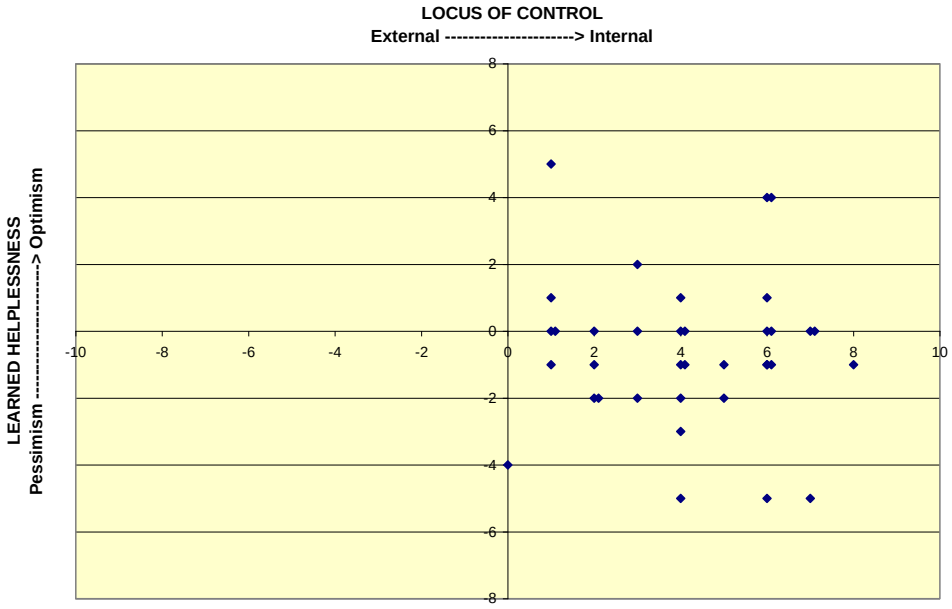

Figure 10. Gnostates Scores for Each Student

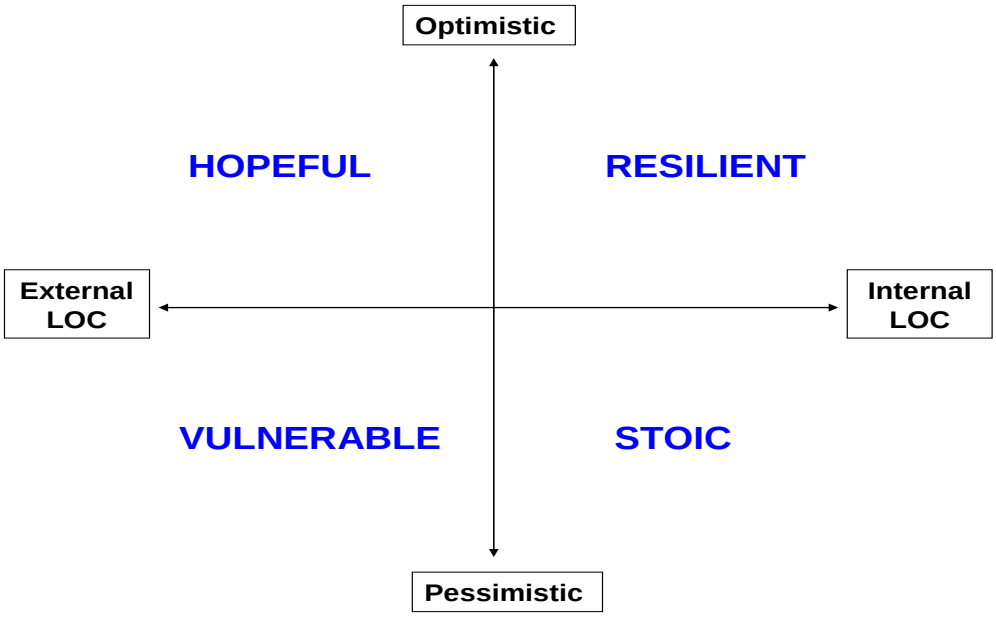

Figure 11. Gnostate Quadrant Descriptors

The students with co-ordinates in the Resilient quadrant tend to display a mixture of the characteristics of both the internal LOC and the optimistic (or mastery oriented) students, including self-motivation, leadership, the ability to recover well from setbacks and to learn from mistakes, optimism and self-efficacy. The characteristics of those in the Stoic quadrant tend to be a mixture of both the internal LOC and the pessimistic (or helpless) characteristics, including controlling of others, doggedness, frustration, and self-blaming.

Figure 12 reveals the academic achievements of each student as related to their position on the Gnostates grid.

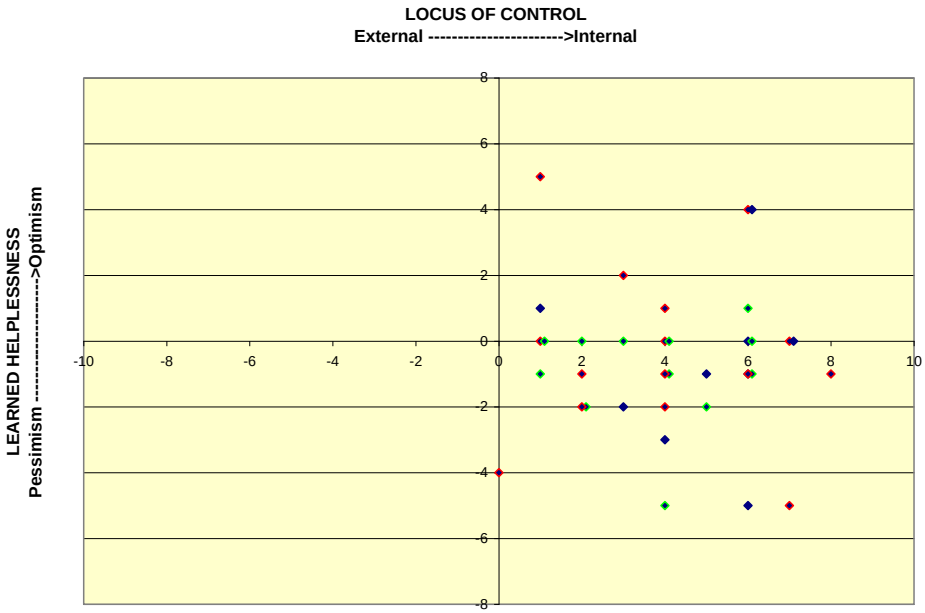

Figure 12. Gnostates and Examination Achievement
High Achiever, Achiever, Underachiever

As with both the individual LOC and LH graphs, this figure reveals no obvious pattern or connection between resilience orientations and academic achievement with both high achievers and underachievers being found distributed across the Resilient and Stoic quadrants. One interesting element revealed by this analysis was that at all four poles of this particular distribution of students there were found to be virtually matching pairs of students with very different academic achievement

results (see Figure 9). In each case were found two students with virtually the same resilience/vulnerability orientations but quite different academic achievement.

These eight students were selected as interview subjects. In addition, two other students originally chosen by teachers as underachievers, were also selected for interview. One of these two students had performed as expected at the underachiever level but the other had performed at the high achiever level, confounding expectations. The aim of the interview phase was to explore similarities and differences in thinking between these 10 students.

4.2 Part 2

4.2.1 Phenomenographic Enquiry

The aim of this section was to determine if there were any significant differences between the perceptions and understandings of the high achieving and the underachieving students who were paired up on the basis of the Gnostates analysis. Figure 12 shows the range of positions on the Gnostates grid and the range of academic achievements, of the students selected for interview.

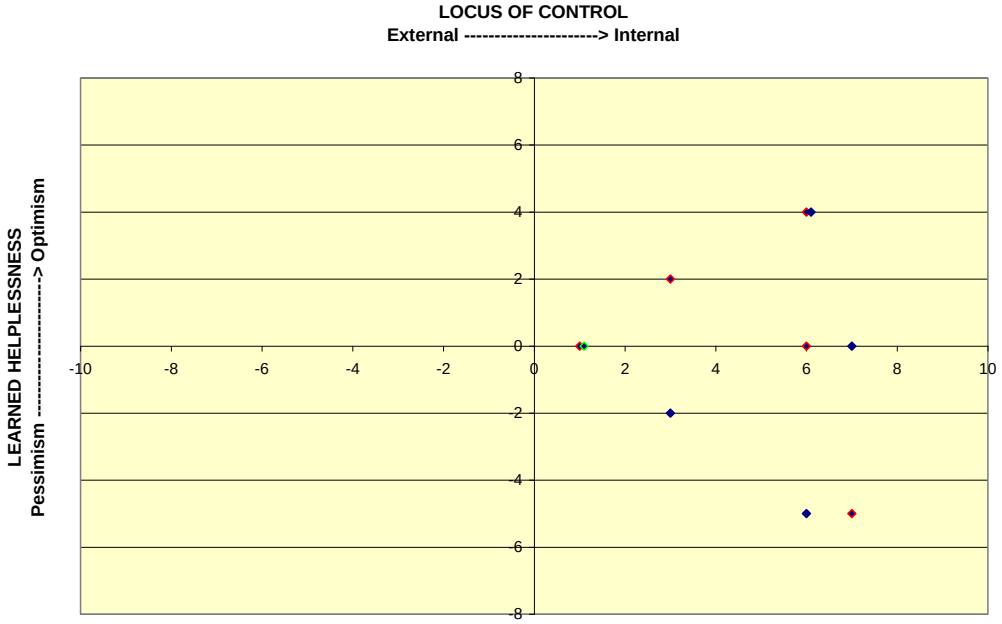

Figure 13. Examination Achievement of Student Interviewees: High Achievers, Achievers, Underachievers

The aim of the pairing of the students was to try to match the similarities between them in terms of LOC and LH so that the differences between them became more obvious. It was important in the interviews to try and elicit from the students both their practical strategies for achieving (or not achieving) academic success and also the more phenomenographic data on their different ways of understanding the twin concepts of success and failure.

Entwhistle (1997) suggests that the inclusion of extracts of verbatim text can help to exemplify different *catagories of description* which can then be formulated collectively into *conceptions* that depict the relationships between the individuals and the phenomena, in this case success and failure (Marton, 1986). Due to the mixed method approach of this study and the need for the interview section to yield more than just phenomenographic reflections it was decided to report the students' comments directly, but in a summarised way with minimal direct quotations. As each interview used the same fixed bank of questions the responses were already grouped around key descriptors from which differences in conceptualisation of success and failure were then drawn. It was in the reactions to failure that the greatest differences were found between the high achievers and the underachievers which enabled an *outcome space* relating to different perceptions of failure to be constructed.

4.2.2 Pair One

Alice and Andy both scored very highly for optimism and for internal LOC and yet they had performed at very different levels in their most recent examinations. Alice was identified pre-examinations as one of the underachiever group and in her 2007 examinations (end of Year 10) she passed at the underachiever level. Andy was identified by his teachers prior to his examinations as one of the high achiever group, and in his 2007 examinations (end of Year 9) he passed at the high achiever level.

4.2.2a Alice's Interview

Alice appeared to be confident and calm throughout the interview, was interested in the topics discussed and engaged readily with the researcher. She was very positive and optimistic about her academic achievement in the 2007 exams and considered that it was all pretty easy and she had done quite well. She attributed her success mostly to her ability to memorise, almost photographically, essays and answers to questions, which she would then be able to repeat back in the exam. Later in the interview however she described one of her greatest difficulties being her inability to remember dates.

Alice displayed an understanding of the importance of effort in achieving at the top level but from her actions to date appeared to be disinclined to put an effort-based strategy in place. Being labelled as gifted made her a little uncomfortable due to high expectations from parents and peers that she felt she might not achieve.

Success for Alice was not tied to any specific achievement or ability but more to life in general and she felt that her life was going well and everything was good for her. In terms of dealing with failure Alice did not consider that she experienced any failure because she was able to use her abilities to avoid it occurring. She felt capable of achieving everything she wanted to but was also aware of being a *terrible procrastinator*. What she had noticed was a consistent pattern in herself in reaction to schoolwork deadlines. She would ignore it until the pressure from what she described as her *depression from putting it off* generated a feeling of impending doom and panic extreme enough for her to then stay up all night working until it was finished. Alice was quite aware of this tendency but revealed that she had no considered strategy for overcoming it.

Alice's goal in life was to make a difference for people but she had not decided on a clear career path as yet. Her greatest fears were failing at school or just generally in life and her strategy for dealing with that fear was (in her own words): "Panic. I panic for ages and then I start putting in the hard yards, that's what I usually do."

4.2.2b Andy's Interview

Andy appeared to be calm, quiet, attentive, thoughtful and somewhat nervous. He was realistic in assessing his own academic achievement in the 2007 exams, displaying no false modesty but a realisation that he could always do better. In his estimation he thought he had done well enough, up to his own standard. He attributed that success to working hard and having confidence. He had a very clear strategy for study and achievement in exams involving understanding rather than memorising, and a strong belief that he could succeed: "Nothing is too difficult really as long as you believe it can be done."

His definition of success was achieving good results from hard work, setting goals and then achieving them. He did not see any one success as more significant than another and felt that he tried his best at everything he did.
For Andy, failure just meant a lack of effort, he did not see any difficulties as failures, just feedback that he needed to try harder.

Andy felt good about being labelled as gifted but thought that it was also important to be humble about one's gifts. He did not see it as adding any additional pressure to him as most of the pressure he felt, he put upon himself.

In summary, both demonstrated resilience and a belief in their own ability to handle the difficulties in their lives. Alice relied on her abilities to produce success, using optimism to help her ignore any failures, and avoiding academic responsibility by procrastination as long as possible and then, as a last resort, using panic followed by maximum work effort to achieve necessary goals. Andy on the other hand used clearly thought out effort based strategies for both achieving success and overcoming failures and used self analysis, reflection and optimism to create a strong self belief that he could achieve whatever he set his mind to. Both gave the impression that they felt in control of their respective lives. Both were self-reported perfectionists, a perception that was confirmed by their supervising teacher.

Alice and Andy, although both fitting the profile of the resilient high achiever (strong internal LOC plus optimism) were achieving at very different levels. If Andy's high achievement and Alice's underachievement are considered in the light of Seifert's (2004) model of student behaviour patterns then some explanation may be found. Andy fits the *mastery pattern*, the characteristics of which include: intrinsic motivation, positive affect, flexibility and adaptive strategy use, persistence and the ability to learn from mistakes, confidence, efficaciousness, self-determination and a strong sense of control. Also the tendency to take full responsibility for his own successes and failures, attributing both to internal, stable, controllable causes, for example, effort. Alice on the other hand fits Seifert's second behaviour pattern, the *failure avoidance pattern*. This pattern includes a concern to maintain ability perceptions and protect self worth; a focus on performance measures; a belief in the primacy of ability over effort; procrastination and the rationalisation of mistakes or failures. Also a tendency to take responsibility for successes but not for failures, attributing both success and failure to internal, stable, uncontrollable causes, for example, ability.

The most obvious difference between these two students was in their approach to failure. Alice consistently denied that failure existed for her, at a considerable variance to the estimation of her teachers, she used ability attributions to explain any setbacks and she used no obvious strategies to reflect on and learn from mistakes. Andy on the other hand, utilised complete effort based attributions for any failure and was very focused on learning from his mistakes, applying effort, being adaptable and achieving the best that he could.

4.2.3 Pair Two

Barbara and Bonny both scored very highly for internality in LOC and neutrally for Optimism/Pessimism. They both appeared to be resilient, capable, independent and focused but had performed at very different levels in their most recent examinations. Barbara was identified pre-examinations as one of the underachiever group and in her 2007 exams (end of Year 11) she passed at the underachiever level. Bonny was

identified by her teachers prior to her examinations, as one of the high achiever group and in her 2007 examinations (end of Year 11) she passed at the high achiever level.

4.2.3a Barbara's Interview

Barbara appeared to be confident, calm, not at all intimidated by the interview situation, amused rather than interested, and appeared to be tolerating the imposition of the interview in her busy schedule.

She was quite precise in her assessment of her exam performance. She thought that she had done well because she had got through, passed everything that she wanted to and any failures she experienced had been expected. Barbara's goal was simply to pass, and she was living up to her own expectations. She seemed quite proud of her study strategy, which was to do *nothing at all* and to rely on her natural ability to carry her through. She felt that she was lazy and could do much better but was not motivated to do so.

Barbara revealed a plan to change tactics for 2009, as it was to be her last year at school and in her own eyes had improved her performance by going to all classes and doing the homework required. She had a plan to study before her next exams and although she had not started at the time of the interview, she was very confident she would study well at the end of the year when she felt she really would need to.

Barbara demonstrated a clear belief in her own intellectual ability as being higher than the average but did not think the standard at school was very high. She didn't see school as being very difficult for her because of the specific strategy she adopted for handling difficulties. In her own words: "…anything I struggle in, I drop, because I don't like things that I'm not good at." She did not see the application of effort to overcome difficulties as a worthwhile strategy and relieved herself of any academic challenges by removing all subjects she found difficult. In the subjects

that she thought she could be successful in she revealed a desire to do well and an understanding of the need for effort but a lack of actual application. She knew what to do but just had not got started yet.

Barbara gave the impression of being very strong minded, possibly not in a way which would endear her teachers towards her, as she appeared to be unafraid to challenge anything she disagreed with. Barbara described success for her as leaving school and becoming financially independent. The greatest success she could recall was recently earning enough money after school to be able to buy her own ball dress. She was very focused on her social circle of friends, and achieving their respect and approval appeared very important to her.

She said that she would see not achieving her immediate goals to finish school successfully and leave as a failure but also that she would not allow herself to consider it as a possibility. Her strategy was to focus her energies in the areas she was already successful in and eliminate or avoid all others. Barbara's main strategy to handle any difficulties was distraction with friends, shopping and fun things to do. She attempted to use reflection and learning from difficulties but admitted that she was a slow learner when it came to her own mistakes.

Barbara gave the impression of being able to be very focused when she chose to be but at present she was very intent only on leaving school and making her own independent way in the world. Success at school did not appear to be a priority to her.

4.2.3b Bonny's Interview

Bonny was bright, cheerful, interested, talkative and appeared thoughtful in that she gave some consideration to most questions before answering them. She was both pleased and unhappy with her results from her end of 2007 examinations. The difficulty for Bonny was that although she achieved all *Excellences* in her exams, her actual marks were less than they had been in the practice exams which was

disappointing for her. Bonny had particular and well thought out study strategies for each subject, which not only took into account the type of information processing required, but also the strategic weighting of effort where it would yield the best results. She was prepared to put more time and effort into high credit assessments than into others.

Being labelled gifted at school made Bonny a little uncomfortable because of the added pressure of expectations, and although she enjoyed school she found that her greatest difficulty was being the one that everyone else was compared to. She attributed her academic success to a combination of hard work and the ability to focus and concentrate to the point of blocking everything else out. She was involved in a wide range of extra-curricular activities including playing and coaching both badminton and netball, being in the school debating team, playing the violin at both the school and regional level, and singing individually and in a barber-shop quartet. Bonny considered that the organisation of all her activities had taught her good time management skills which she also applied to her academic studies.

For Bonny, success was about achieving at something that she found difficult, something that took real effort to achieve, and her only concept of failure was not trying hard enough. She was aware of her own motivational strategies as well as her perfectionist tendencies and was learning to moderate her perfectionism in the pursuit of learning. To deal with difficulties Bonny used a combination of release followed by action, usually involving music and sport, but then would also do what she could to rectify the situation. “I can’t just hope for things to go away, I always try to resolve it, I have to be the one who goes and tries to fix it.” Bonny had a clear goal to undertake study with an aim of helping people but had not decided on a particular speciality to pursue and her greatest fear was running out of time in her life to do all the things ahead of her.

Both Barbara and Bonny were quite aware of being able to achieve at a high level through the application of control and effort but while Bonny chose to exercise that

awareness, Barbara seemed to take an almost perverse pleasure out of not striving. Bonny appeared to be self-motivating, persistent, resourceful, organised and capable of pushing herself to very high levels whereas Barbara by her own admission was lazy. They both had clear ambitions and the self belief that they could achieve them, and success for them both was overcoming considerable challenges. One difference between them being that Bonny found those challenges within academic subjects and extra-curricular activities, whereas Barbara found challenges in disagreeing with authority figures and pushing for her own independence. In reaction to failure their strategies were very different, with Bonny reporting her own reflection, adaptation, learning from failure, strategic planning and the application of effort, and Barbara reporting avoidance and denial. Both were self-reported perfectionists which, although not obvious from both interviews, was confirmed by their supervising teacher.

Barbara and Bonny both fit the profile of potential high achievers with strong internal LOC. Although they were not very optimistic, neither girl exhibited the pessimism associated with learned helplessness; and yet they were found to be achieving at very different levels. If Bonny's high achievement and Barbara's underachievement are considered in the light of Seifert's (2004) model of student behaviour patterns then some explanation may be found.

Bonny fits Seifert's *mastery pattern*, (refer to earlier interview). Barbara on the other hand, fits Seifert's fourth behaviour pattern called *work avoidance.* This pattern includes choosing to under-perform due to perceived boredom or meaninglessness or as an aggressive response to an inadequate learning situation, demonstrating high volition, taking no responsibility for success or failure and attributing both to external causes both stable and unstable, controllable and uncontrollable.

As in Pair 1 the most obvious difference between these two students was in their approach to failure. Barbara had a simple avoidance strategy when it came to any failure or potential failure and clearly did not see schoolwork as significant enough

in her life to devote any real effort to. Bonny on the other hand utilised hard work, talent and organisation to limit failure to near non-existence but was prepared to learn from any mistakes, apply more effort and achieve the perfection she desired.

4.2.4 Pair Three

Charlie and Colin both scored very highly for both internality in LOC and pessimism. They appeared to be two very different people and had performed at very different levels in their most recent examinations. Charlie was identified by his teachers prior to his examinations as one of the underachiever group and in his 2007 examinations (end of Year 11) he passed at the underachiever level. Colin was identified pre-examinations as one of the high achiever group and in his 2007 examinations (end of Year 12) he passed at the high achiever level.

4.2.4a Charlie's Interview

Charlie seemed to be diffident, shy and somewhat confused about the interview process, but he was talkative and, with respect to the 2007 exams, very pessimistic about his academic achievement. He attributed his poor results to a combination of external and internal causes but overall he took the blame upon himself.

Although Charlie passed his exams at the average or under-achiever level, he was described by the teacher who oversees gifted students as a great mathematician and a musical prodigy with the cello, but someone who may just perform poorly in exam situations. Charlie himself indicated that he found the educational system to be inimical to his own preferred way of learning and he did not consider NCEA to be a system that assessed learning well. He indicated that he was trying to study this year but because of his own procrastination he never felt that he had enough time. Charlie also acknowledged his own poor time management but did not identify any strategies to overcome it.

Being described as gifted made him uneasy due to the expectations of others. He showed some objective awareness of his own actual performance (in music and

maths) but then coloured that awareness with his own negative interpretation: "Well, I feel failure no matter what happens. I think I have a very pessimistic nature. I feel failure even when my friends tell me I shouldn't be feeling bad about everything."

Success for Charlie was getting things done, finished and out of the way, but he thought that he would never achieve success because he felt he was such a procrastinator. He could not describe a clear strategy for self-motivation and was dismissive of any teacher's positive comments about him. In terms of goals he described many avenues of talent and skill that he wanted to develop and pursue but then reflected that accomplishing them might be difficult because he hadn't yet taken any steps towards achieving them.

4.24b Colin's Interview

Colin presented as neat, tidy, thoughtful, organised, and was very accurate in assessing his own academic achievement with respect to the 2007 examinations. He aimed for and achieved exactly the grades he needed to get into the course he wanted, one year earlier than most. Success for Colin was related to the efficient use of energy and time to achieve the goals that he set himself. At university he said he was applying very precise study techniques and was being very strategic in the application of effort between and within subjects.

Colin did not personally agree with the idea of labelling students as gifted, based on intelligence or performance, but he thought that it was a necessary condition for the functioning of NCEA in terms of the allocation of resources.

Colin said that his definition of success in his life was achieving the goals he set for himself, and he attributed a significant key to his success to the help he received at school from one significant teacher. In thinking of failures or difficulties he had to overcome, Colin focused on his family which he described as a disaster, the effects

of which he had overcome. Colin's family life was clearly a source of emotional distress for him and the focus of his pessimism.

Colin described very clear and specific short and medium term goals, well within his control and ability and his major concern was only for the effects of his chosen path on those who were closest to him and who were reliant on him for support.

In summary, both were able to achieve some good to excellent results through their own efforts but Charlie saw all his achievements as failures and Colin accepted his results as the expected outcome of his calculated effort and strategic planning. Charlie appeared to be almost completely overwhelmed by what he saw as the difficulties in his life, saw himself as a profound procrastinator and gave the impression of being almost completely helpless. In reality he was said (by his supervising teacher) to be brilliantly talented at both maths and music where he performed at a level well above his age peers. Charlie's only strategy for dealing with failure appeared to be a combination of avoidance and helplessness, whereas Colin's strategy was clearly about establishing complete control. Charlie seemed almost to wallow in his pessimism but Colin seemed to be keeping his pessimism, which appeared to be focused primarily around his family life, tightly under control by setting specific personal targets, focusing on self-achievement and limiting his goals to those immediately achievable. Colin was also achieving above his peers by being at university one year ahead of *normal*, but he saw that as simply the application of focus, planning and the strategic application of effort. Both were self-reported perfectionists which was confirmed by their supervising teacher.

Colin and Charlie both showed the strong internal LOC of potential high achievers combined with the high levels of pessimism often associated with helplessness. Both were achieving, although at different levels, and the most significant difference between them was Colin's strong self belief and Charlie's apparent total lack of self belief. If Colin's high achievement and Charlie's own perceived underachievement are considered in the light of Seifert's (2004) model of student

behaviour patterns then some explanation may be found. Colin fits the *mastery pattern* (see first interview). Charlie on the other hand, fits Seifert's third behavioural pattern called the *learned helplessness pattern.* Those demonstrating this pattern are often unwilling to engage in tasks because they see effort as futile and failure as imminent. They think that the performance outcomes that are expected of them are out of their control, and consequently feel incompetent and unable to take any positive action. They tend to take responsibility for their own failures but not their own successes, attributing failure to internal, stable, uncontrollable causes, and success to external forces.

As in Pair 1 and Pair 2, an obvious difference between these two students was in their approach to failure. Charlie held the strong belief that everything he did was a failure and that he was essentially powerless to change that outcome, he actively denied any successes and focused entirely on what he saw as his short-comings. Colin on the other hand established absolute control in the parts of his life that he was able to, and used precise goal focus and the application of effort and personal organisation to achieve the outcomes he desired.

Two significant commonalities across this group of students interviewed so far were very high internality in LOC, and perfectionism. All six students also clearly understood the importance of effort in producing success, and all six were able to utilise, in their own distinct ways, strategies involving personal control and the application of effort in order to achieve when it was important to them. Within each pair there was one student performing at the highest academic level and another student underachieving. Consistently within each pair the student achieving at the highest level was found to display what could be called a *healthy,* learn-from-mistakes attitude to failure and the underachieving student displayed an *unhealthy* reaction to failure ranging from denial to avoidance to helplessness across the pairs.

4.2.5 Pair Four

David and Debbie both scored almost neutral for both LOC and optimism/pessimism. Both appeared to be capable, skilful and able to motivate themselves but they had performed at different levels in their most recent examinations. David was identified by his teachers, prior to his examinations, as one of the high achiever group but in his 2007 examinations (end of Year 12) he passed at only the achiever level. Debbie was identified pre-examinations as one of the high achiever group and in her 2007 examinations (end of Year 12) she passed at that level.

4.2.5a David's Interview

David seemed calm, relaxed and confident in the interview, and was accurate in his assessment of his achievement in his 2007 exams. He attributed his lack of top performance to a combination of external and internal causes.

This year David had decided to improve his study strategies and by the time of the interview he thought that he was making good progress.

David did not see himself as being gifted, he thought that his achievement was due to organization, time management and effort and he saw himself as someone who had tried harder and sacrificed more than the average student. David had a very pragmatic view of achievement and described how he would adjust his output and his level of completion to suit the task and its credit value. According to David, school did not present him with too many difficulties and he saw success as related mostly to his ability to manage time effectively and break goals down into achievable tasks. He described failure as "Not meeting up to your expectations of yourself or your parents and not doing as well as you can."

David did not consider himself to be a perfectionist (an observation that was confirmed by his supervising teacher), but believed in learning from his own mistakes. He had a long-term goal to work in a job that offered him variety and his greatest fear was of having no aim and feeling lost.

Debbie's Interview

Debbie came across as bright, cheerful, organised and busy. Although she did well in the 2007 examinations Debbie thought that she could have done better. She acknowledged her strengths and weaknesses and adopted an effort-based strategy for subjects she was not strong in, but her expectations still exceeded her results. Debbie continued her study strategies into the new school year and did not see herself as gifted, just hard working.

Debbie credited her own success to a willingness to try new things, to the skills like concentration and time management that involvement in many extra-curricular activities had taught her, and to diligence. The hardest thing for Debbie was focusing on school work with all the distractions of the modern world around her and the plans she was making for when she was at university. She described the thing that gave her the greatest feeling of success as "Self achievement. Over my life I have achieved so much, but there is always more that you can achieve."

She was very closely tied to her family, especially her younger brother and viewed failure as letting down the people that trusted her the most. In terms of academic failure, she was very pragmatic, viewing any failure as a temporary setback, a mistake to learn from and then keep going.

Debbie was prepared to aim for the highest possible standard of work in some areas and a sufficient standard to pass well in others. She seemed quite strategic in her application of effort. She did not demonstrate consistent perfectionism and this was confirmed by her supervising teacher. She demonstrated well thought out strategies for recovering from difficulties and her greatest goals were feeling rather than performance oriented.

The differences in achievement between these two were not between high achiever and underachiever but between high achiever and achiever. Their awareness of

study skills and the necessity for effort to achieve what they wanted were very similar. They were neither particularly optimistic nor particularly pessimistic. They both used internal attributions of causality for success and for failure, although David also included some external causes for his slight underachievement. Neither was particularly performance oriented or perfectionist although Debbie did demonstrate more of a driven nature than David when it came to the subjects she was passionate about. They were both very pragmatic about academic achievement, not likely to stress or worry too much and both gave the impression of currently working well within their respective capabilities and possibly biding their time until they left high school. The only rationale for the difference in their achievement levels is simply volition; they appeared to be actively choosing to operate academically in different ways and at different levels.

4.2.6 Pair Five

Edward and Evan both scored as moderately Internal for LOC but where Edward scored as moderately pessimistic, Evan's score was moderately optimistic. In their most recent examinations they achieved quite different results. Edward was identified by his teachers, prior to his examinations, as one of the underachiever group and in his 2007 examinations (end of Year 10) he passed at that level. Evan was identified pre-examinations as one of the underachiever group but in his 2007 examinations (end of Year 9) he confounded expectations and passed at the high achiever level.

4.2.6a Edward's Interview

In response to the questions throughout the interview Edward gave minimal responses, did not attempt to engage in any depth with the questions or the interviewer and defaulted to one word answers where possible.

Although Edward was seen as underachieving by his teacher, he considered that his performance in the previous year's examinations was reasonable, that he had received the marks he wanted and said he was happy with that result. Although he

acknowledged that in terms of study he had put in minimal effort, he was still happy with the grades he achieved. In consideration of a study plan for the present year Edward indicated that he was prepared to put in a little more effort as the level required had increased somewhat but he did not identify any specific strategies beyond studying and focusing more. He had recently had a round of practice exams and was once again happy with his results.

Edward did not consider being labeled as gifted to be a problem or an advantage, except that he thought it might increase expectations. The only difficulties he said he had with schoolwork were time management and procrastination. He acknowledged these things affected the quality of his output but he described no plans to change any strategies in order to improve on that performance. Edward's idea of success was achieving more than he expected, although he could not think of a specific example. In response to a direct question, he said that the only failure he could imagine was not passing at school, but if this were to happen it would most likely be because he hadn't put in the effort and studied hard enough.

Edward was not involved in any extra-curricular activities and in his academic work aimed for a level just above average, which he felt he mostly achieved and was happy with. He reported never feeling *down* and so was not aware of any strategy he used to overcome such a feeling. His goals were immediate and he acknowledged no particular fears.

4.2.6b Evan's Interview

In direct contrast to Edward, Evan was very expressive in response to the questions throughout the interview and engaged seriously and thoughtfully with each question.

Evan reported finding his 2007 examinations to be quite easy, he appeared to have enjoyed them and was happy with his results. In this current academic year he said that he was applying more effort in his studies to cope with the higher level of

difficulty and that he had adopted a new strategy of reading around the topic to increase his background knowledge.

Evan saw being labelled gifted as a worthy recognition of ability and a distinct advantage in the opportunities it opened up outside the standard curriculum. Some potential difficulties identified by Evan were the increased pressure and expectations from teachers and others, and a personal feeling of not being as far ahead of the average student as he once had been. He said he was a great reader and researcher and seemed to have a real thirst for knowledge. Success for Evan involved feeling competent, capable and knowledgeable, and failure centered on a lack of effort or organization on his part.

Evan reported that while he was prepared to adjust the quality of his output to the interest that the task held for him, he was also mindful of achieving at least a good mark in everything, even the things he didn't enjoy. Evan considered that he would most likely use a combination of distraction and avoidance to deal with any bad feelings but he thought that he would actively seek help in an extreme situation. His long-term goal was to have an interesting job and his greatest fear was of external forces like war or climate change disrupting the predictability and comfort of the life he expected to lead.

There were significant differences in achievement between the two students in this pair although both were judged to be underachievers by their teachers, as one lived up to expectations and the other greatly exceeded them. They were matched on LOC scores but were quite different on the optimism/pessimism scale. Edward had the more pessimistic score and in the interview was withdrawn and untalkative. Evan on the other hand scored as somewhat optimistic and presented as bright, enthusiastic and almost garrulous. Measures of both success and failure for Edward were oriented externally around grade achievement in examinations but he attributed any hypothetical failure on his part internally, mostly to a lack of effort. For Evan on the other hand, both success and failure were internally oriented. Success was described

as understanding things he found difficult or interesting, and failure was related to a lack of effort or organization on his part. An explanation for their different achievement levels may be that they both seemed quite happy with their present performance. Edward was focused purely on passing or not passing, was quite happy to achieve a minimum pass with minimum effort and was not interested in trying new strategies to improve academic performance. Evan was much more interested in stretching his understanding simply for the intellectual challenge it provided. As with Pair 4, the difference in their achievement levels appeared to be simply volition, as they both seemed to be actively choosing to operate in different ways and at different levels.

4.2.7 Interview Summary

In each of the five pairs of students there was one achieving student and one underachieving student. Each pair was found at different locations on both the LOC and LH scales. It would appear then that neither LOC or LH orientations provide sufficient explanation for their disparate performance.

Of the first three pairs of participants, all six were high internal LOC, self-nominated (and verified) perfectionists. Although three were achieving at the highest level and three were underachieving, the three underachievers did not completely fit the classic picture of the neurotic (Hamachek, 1978) or socially prescribed perfectionist (Siegle, Flett, Hewitt, Blankstein & Dynin, 1994). All three high achievers did fit well with Seifert's (2004) mastery pattern of student achievement behaviour however, and the three underachievers fitted well into Seifert's failure avoidance, learned helplessness and work avoidance patterns. The two underachievers who fitted the failure avoidance and work avoidance patterns appeared to be doing so as a deliberate controllable strategy that they were quite comfortable with, whereas the third underachiever appeared to consider his helplessness to be an innate characteristic over which he had no control.

In pairs four and five, all four participants had low to medium internality of LOC and none was seen to be perfectionist. Once again there were two high achievers and two underachievers. The characteristics of all four were very similar, with a slight tendency for the two underachievers to attribute failure to more external causes than the two high achievers, but all four appeared to be in control of their achievement level and were actively choosing to operate in the way and at the level that they were.

4.3 Conclusions

4.3.1 Part One

One result of this study was that all of the gifted student participants were found to exhibit a LOC score from neutral to highly internal and not one student participant showed a significant orientation towards externality in LOC. This provides evidence that within this study internality and giftedness are correlated but without a comparative study of a non-gifted population of similar students it is not possible to determine if internality is significantly associated with giftedness.

No link was found in this study between the incidence of an internal LOC and academic achievement as both gifted high achievers and gifted underachievers (as defined) were found to have internal LOC scores.

As measures of LH, the optimism and pessimism scores of the students in this study demonstrated no relationship between LH and academic success. Both high achievers and underachievers were found at the points on the scale of both greatest optimism and greatest pessimism. As has been noted, it may be that the influence of an internal LOC on academic performance is enough to overcome any tendency towards pessimism or associated helplessness. This explanation, however, does not help explain the wide difference in academic performance across the group and in particular the performance of the underachievers with internal LOC and orientations towards either optimism or pessimism

From the Gnostates analysis no obvious pattern or connection between orientations towards resilience or vulnerability and academic achievement was found. Both high achievers and underachievers were found across both the Resilient and the Stoic quadrants.

For the three factors of performance versus mastery goals, effort versus ability and the nature of intelligence, no significant distinction between the students classified as underachievers and those classified as high achievers was found. The incidence of self-reported perfectionism however, was found to increase from the underachievers to the achievers to the high achievers, indicating that the type of perfectionism noted by the students themselves appears to support high academic achievement.

4.3.2 Part Two

Across all five pairs the practical strategies and internal characteristics of the high achievers and the achievers that were noticeably different from the underachievers were:

- involvement in extra-curricular activities
- intense interests or passions
- intellectual curiosity, academic engagement, a drive for understanding
- gaining enjoyment from significant challenge
- an active and clear goal focus
- using active strategies to learn from failure
- choosing to succeed.

The major distinction noted in the achievers as compared to both the underachievers and the high achievers was the element of volition. The achievers appeared to be actively choosing the level of application of their effort in different areas and were deliberately aiming at the grades they were achieving. They appeared to be both less driven to achieve than the high achievers and less ‘helpless’ in respect to academic achievement than the underachievers.

While both the high achievers and the underachievers all attributed failure to a lack of effort in both their questionnaire and interview data, a noticeable difference between them was elicited from the interview data. The high achievers all reported actively applying long term effort-based strategies for academic achievement, whereas the underachievers only reported applying effort in response to immediate deadlines. Similarly with procrastination, all interviewees reported procrastination to be a problem for them but whereas the high achievers were actively taking steps to get on top of the problem, the underachievers were succumbing to it and resorting to last minute urgency to get them through. The understanding and acceptance of failure was strongly exhibited by the high achievers in their interviews in contrast to the underachievers. The underachievers tended to deny that failure existed for them or took steps to avoid the possibility of failure in their lives. The one underachiever who acknowledged failure reported feeling completely overwhelmed by what he saw as the total failure of everything in his life and so rendered himself completely helpless.

The responses to failure reported across the five underachievers were:

- denial that failure existed
- the use of ability attributions to explain any setbacks
- using no obvious strategies to reflect on and learn from mistakes
- eliminating any subject or task in which failure was experienced
- avoiding situations where failure was possible
- believing that every personal action resulted in failure and it was impossible to change
- denying any successes
- focusing on own short-comings
- disengaging from the subject matter
- being content with underachievement.

In comparison the responses reported by the five high achievers in dealing with failure were:

- using effort based attributions for any failure
- a focus on learning from mistakes
- being adaptable and achieving to the level of personal best
- using hard work, talent and organisation to limit failure
- being prepared to try new strategies and apply more effort
- establishing absolute control in important areas
- using precise goal focus and the application of organisation and effort to minimise failure
- viewing failure as temporary and specific
- taking responsibility for own actions in any failure situation.

It was in the reactions to failure situations, whether real or hypothetical, that the most significant difference between the high achievers and the underachievers was found.

CHAPTER FIVE

Conclusions

5.0 Introduction

The central purpose of this qualitative, multi-method study, was to investigate any linkages between the academic achievement of intellectually gifted students and their perceived and measured resilience orientations. It sought first to use a conceptual model called Gnostates to classify the students in terms of their general resilience or vulnerability, and then to use that classification to help choose subjects to interview. The interviewees were selected to represent a wide range of resilience/vulnerability types and also to include both students who had achieved at a high level and those who had underachieved in their most recent examinations. The aim of the interview phase was to gather the students' perceptions of, and reactions to, considerations of success and failure within their own lives in order to look for commonalities and differences. Any patterns emerging, especially any which differentiated between the high achievers and the underachievers, would then be compared with theoretical models of resilience and achievement.

This chapter provides some of the conclusions that can be drawn from this study, identifies the study's limitations, and makes suggestions for further research.

5.1 Conclusions

5.1.1 Part One.

A complete lack of externality of LOC characterised all the gifted students in this study. All of the students registered LOC scores from neutral to highly internal. It is difficult to say, without further study, whether this characteristic is a consequence of the selection policy for gifted students at the school or due to some other factor. Utilising the same questionnaires with all the students across the school would yield the data needed to inform that question.

Within the sample of students for this study were high achievers, achievers and underachievers, as defined by their grades in recent examinations. Students in all three achievement categories were found with LOC scores ranging from neutral to highly internal. No link was able to be made between increasing internality and academic achievement.

This finding appears to be contradictory to that of Rotter (1975), who found a correlation in school students between internality and grades achieved, and to Findley & Cooper's (1983) meta-analysis of 98 studies over 20 years, which found that internality and academic achievement were positively related. Kalechstein and Nowicki's (1997) survey 11 years later of 80 papers published since 1983, also found the strongest link between internal LOC and academic achievement in secondary students as did Twenge, Zhang, and Im's (2004) review of studies of students from elementary school to university.

In the measurement of LH by questionnaire, a similar result was achieved. The students' scores of optimism and pessimism (as measures of LH), were distributed across the full range from highly optimistic to highly pessimistic. When academic performance was considered together with LH, both high achievers and underachievers were found at the highly optimistic and the highly pessimistic ends of the scale and many places in between. No link was able to be made between increasing helplessness and a decline in academic achievement.

This finding also appears to be contradictory to many studies. These have found a close connection between helplessness and inattention, difficulty in thinking, depression, giving up in the face of failure, the inability to persist or persevere, and an unwillingness to engage in new tasks (Seligman, 1975; Fincham et al. 1989; Dunn et al, 1998; Seifert, 2004; and Firmin et al, 2004). All these characteristics would be expected to result in poor academic performance but even the students with the highest pessimism scores were not found to necessarily be academic underachievers. Of the two students in the study who scored both the highest levels

of pessimism and the highest susceptibility to helplessness, one was a high achiever and the other was an underachiever.

One possible explanation for both these results being at odds with much of the academic literature could be that the instruments used to measure LOC and LH may not have been effective in measuring those two parameters. This seems unlikely though, as they were both modelled respectively on Rotter's (1966), and Seligman's (1975) original published questionnaires. Another possibility is that underachievement may be a deliberate choice being made by students which over-rides any LOC or LH orientations. A third possibility is that there might have been significant personal factors outside the classroom and the school which exerted a major influence on the underachievers' academic performance.

The Gnostates analysis combined the results of both the LOC and the LH questionnaires into a graphical grid bound by those two scales. This created a conceptual space which revealed tendencies towards resilience or vulnerability. When all students' scores were viewed in this space and any trends which related to the academic achievement of the students were sought, no connection or correlation was found. Both high achievers and underachievers were found at all points of the Gnostates space.

Some of the students surveyed were found to perform at a low academic level despite possessing the attributes of the resilient and successful learner (internal LOC + optimism). Delisle (1992) describes similar students as selective consumers who choose not to participate in assigned tasks or who choose to participate at a minimum level as an active strategy to help maintain healthy self concept and self esteem. Kanevsky and Keighley (2003) also found a strategy of disengagement used deliberately by some gifted students in response to an unstimulating and unchallenging curriculum. As described, this disengagement by volition may explain some of the underachievement observed but there is no similar mechanism to explain the high achievement by some of the more vulnerable students. These are

the students with the highest susceptibility within the group to LH (highest pessimism scores) and the most external LOC scores (0-2 on the LOC scale), who still succeeded at the highest level. Part 2 sought to provide some answers to both these particular contradictions of characteristics and performance.

5.1.2 Part Two.

The results of the phenomenographic enquiry revealed no clear distinctions between the high achievers and the underachievers in their reactions to academic success, being labelled as gifted, assessing their own work output, recovering from negative states, and long term goals and fears. It was only in their interpretation of, and reaction to, failure that any consistent difference was noticed in the responses of the underachievers compared with the high achievers. Within each pair there was one student performing at the highest academic level and another student underachieving. Consistently within each pair the student achieving at the highest level was found to display a *healthy* learn-from-mistakes attitude to failure and the underachieving student displayed an *unhealthy* reaction to failure ranging from denial to avoidance to helplessness. It appears that in these unhealthy or *non-productive* reactions to actual or imagined failure lies the essential internal and controllable difference between the underachievers and the high achievers in this sample of gifted students.

A healthy response to failure as described, could be termed *failing well* and an unhealthy response termed *failing badly*.

Table 8. Student responses to failure:

Failing Well	Failing Badly
Making effort based attributions for failure	Making ability based attributions for failure
Accepting failure as a normal process	Denial of failure
Using strategies to learn from mistakes	No strategies to learn from mistakes
Expecting to experience some failure in new situations or new learning	Believing that all personal action resulted in failure
Being adaptable and making changes where necessary	Focusing on own shortcomings and believing it was impossible to change
Using talent, organisation and hard work to minimise the possibility of failure	Eliminating any subject or task in which failure was experienced
Establishing complete control in some areas	Avoiding situations where failure was possible
Viewing failure as temporary and specific	Viewing failure as pervasive and permanent
Taking responsibility for own actions in failure situations	Being content with underachievement

The major distinction found between the underachievers and the high achievers in this sample of gifted secondary students, regardless of their LOC and LH scores, was that the high achievers were failing well and the underachievers were failing badly.

5.2 Limitations and Future Directions

The design of this study called for an analysis of the resilience of gifted students at Hamilton College. The use of largely untested questionnaires to measure both LOC and LH, and their combination into a newly developed model of Gnostates created definite limitations for this study. Absolute measures of LOC and LH were unable

to be obtained which limited the researcher's ability to compare the information gained with that of other more traditional studies. Good comparative measures of these two variables were obtained however, and any trends in data were then revealed. Once the analysis was complete it became obvious that a comparison of both LOC and LH measures with non-gifted students, using the same questionnaires, would have been very useful to determine if the results obtained from the G-T students were unique or not. This is a clear area for future study.

The discovery of the ability of the high achievers studied to exhibit the characteristics described as failing well, and the concomitant prevalence of failing badly behaviours in the underachievers, irrespective of their LOC and LH measures, opens up much scope for possible future study. Very limited research information is available on the characteristics of failing, especially in G-T students, and a study of failure across all students might be a useful next step in this investigation.

5.3 Recommendations

The process described here as failing well is either explicit or implied in most of the theoretical approaches discussed in this study. The experience of overcoming failure successfully is also one which is basic to the development of resilience. To help develop the process skills of failing well, teachers can focus on the reactions students have to failure and design interventions that enable the student to reflect on strategies for failing well. Possible responses from the point of view of accepted theory are found in Table 9.

Table 9. Comparison of Theoretical Positions on Failure

	Failing Well	***Failing Badly***
Resilience/Vulnerability	Asking: What went right? What can be improved? Strength focused	Asking: What went wrong? What can be eliminated? Deficit focused
Locus of Control	Internal control – taking some responsibility for all failures	External control – taking no responsibility for any failure
Learned Helplessness	Optimistic attributions – failure is temporary and specific with quick recovery, tomorrow is another day	Pessimistic style – failure is permanent and pervasive with slow recovery, tomorrow will be worse
Attribution Theory	Failure is due to a lack of effort; focus on improving, challenge seeking; learning for understanding	Failure is due to lack of ability; focus on proving, challenge avoiding; learning for grade
Mindset Theory	Growth Mindset – failure is feedback, personality and intelligence can change and grow; continual improvement through active adaptation	Fixed Mindset – failure is judgement, personality and intelligence are fixed; self defeating; repeating ineffective patterns
Behaviour Patterns	Mastery – taking responsibility where appropriate; learning from mistakes; success and failure are internal, stable, controllable; no fear of failure	Failure Avoidance – taking no responsibility for failure; success and failure are internal, stable and uncontrollable, or external stable, and uncontrollable Failure Acceptance – taking responsibility for all failure; pessimistic; expecting failure; helplessness

In the classroom the greatest challenge may be in de-sensitising students to the word *failure* and helping them to understand that failure is a necessary part of growth and learning. If that idea can be understood well by students, then it is possible within the classroom to establish a climate where it is safe to fail. Only then will students be able to examine their own reactions to failure and try to build up the skills of failing well.

5.4 The research aims

The aim of the study was to examine whether differences in the academic achievement of gifted students were related to differences in resilience orientations. Measures of LOC, LH and resilience did not yield significant differences between the high achieving and the underachieving gifted students. However, in as much as learning to fail well is a key component in the development of resilience, the study did find a significant relationship. The ability to fail well was an attribute of the high achieving, and failing badly was found to be consistent with underachievement in all the G-T students who were studied in depth.

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