

**THE UNIVERSITY OF CALGARY**

**Achieving and Underachieving Gifted Students:  
A Cross-Sectional Study**

**by**

**William Brett Bowen**

**A THESIS**

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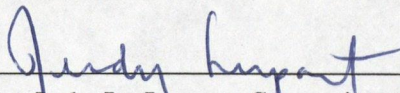
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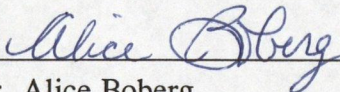
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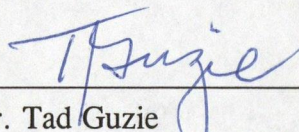
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**THE UNIVERSITY OF CALGARY**  
**FACULTY OF GRADUATE STUDIES**

We, the undersigned, certify that we have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled, "Achieving and Underachieving Gifted Students: A Cross-Sectional Study" submitted by William Brett Bowen in partial fulfillment of the requirements for the degree of Master of Science.

  
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## **ABSTRACT**

The purposes of the study were to identify and to examine variables that would differentiate between gifted achievers and gifted underachievers at a variety of grade levels, and to monitor and to examine changes in patterns of underachievement over time.

The sample consisted of 48 gifted underachieving students in grades 6, 9 and 12 who had participated in phases one and two of the project three years previous, and a comparative group of 55 gifted achieving students in grades 6, 9 and 12. A comprehensive interview/questionnaire comprised of 93 questions in five areas that research had indicated relevant to gifted underachievement was administered individually to each student. Responses to these questions were recorded, analyzed, categorized and compared.

Results suggest grade 9 may be a particularly significant period in the development of patterns of underachievement in terms of both the severity of problems experienced and the prognosis. Variables relevant to gifted underachievement were also found with respect to gender, relationships with others, school-based factors, and family variables.



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This thesis is dedicated to my family -  
to my parents, Bill and Rella,  
for providing the foundation,  
and to Terri, Kelsie and Colter  
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and understanding  
were essential  
to the realization of this goal.

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# **CHAPTER I**

## **INTRODUCTION**

### **Background**

Over the last ten to fifteen years an increasing amount of attention has been focussed on the problem of gifted underachievers, students, who by all estimates, have the ability to perform at high levels, both in school and in careers, but fall short of realizing that potential. Underachievement by society's most able students is troubling for a number of reasons. First, studies of the prevalence of this phenomenon estimate that anywhere between 15% and 50% of our superior students fail to perform at levels commensurate with their ability. While the numbers vary, depending upon the definitions and criteria used, even the most conservative of these estimates imply a tremendous loss, both to the individual, and to society as a whole. At a personal level, bright underachievers have been found to suffer from a variety of problems ranging from anxiety and depression, to suicide. At a societal level, the cumulative loss of the potential contributions of this group is incalculable.

These problems are compounded by the attitudes and practices of educational institutions, a situation which might be best characterized as one of benign neglect. While the philosophical underpinnings and the attendant practice of special education has undergone a radical transformation in the last two decades in terms of how services are provided, services for gifted students and particularly gifted underachieving students have not improved to any significant degree. The educational system seems more concerned with trying to help students functioning at comparatively lower levels move into the normal range of achievement than in enabling the growth of its potentially superior students. While relatively little of our educational resources have been focussed on and allocated to our gifted students, underachieving gifted students

have been particularly neglected. It seems paradoxical that education has invested so little in the way of research and resources to a group where the potential gains and benefits are so great. Although some research on the problem of gifted underachievement has, and is, being done, there are still a number of problems that exist and issues that need to be investigated.

### **Problems**

Research in the area of gifted underachievement has suffered from a number of problems. First, difficulties exist with both the conceptualization of gifted underachievement and the attendant inability to develop a standard accepted operational definition of the term. Research efforts have been hampered and comparisons of studies are made difficult by the lack of consensus. Secondly, research has not taken place within an established framework. The body of work relating to gifted underachievement is eclectic and poorly integrated. There appears to be no consensus on what constitutes central issues or problems in the field, and to date, there have been few attempts to synthesize research, as a means of providing direction. Finally, research efforts are sporadic, and there are few established authorities in the area who devote their research efforts solely to advancing our understanding in this area.

Research that has taken place has identified a number of variables that seem to be associated with underachievement in gifted students. These variables can generally be placed in five broad categories or thematic areas of study: personality characteristics and psychological attributes, relationships with others; school-based variables; family variables; and most recently, gender differences.

Due to the nature of research in this area, and the problems associated with it, there were a number of issues and gaps in research that this study hoped to address.



## Objectives

### *Developmental Nature of Gifted Underachievement*

Research on gifted underachievement has, for the most part, concentrated on narrowly defined sub-populations within a restricted age range. Little work of a longitudinal nature has been done, and what exists deals primarily with secondary and post secondary students. The cross-sectional nature of this study allowed for the examination of numerous variables across a span of educational levels that ranged from grade 4 to grade 12. A major focus for the present study was to provide greater insight into the age- or stage-related nature of underachievement in primary and secondary schools.

The data could, for example, yield information on whether the factors that influence and define underachievement are relatively constant and stable over the years, or whether they vary with respect to such factors as age and duration of underachievement. If variability in patterns of underachievement was found to occur over time, it may also provide information useful in developing treatments and establishing a prognosis for underachievers.

### *Integration of Research Variables*

Most studies have been relatively narrowly focussed on a few variables believed relevant to gifted underachievement. A more comprehensive survey dealing with variables from all five previously mentioned categories would serve a number of purposes:

- a) Comparisons of variables might determine which factors seem to be most closely associated with gifted underachievement.

b) A preliminary exploration of connections between variables associated with gifted underachievement could be undertaken.

c) The composite of information gained could be of use in developing profiles of gifted underachievers and gifted achievers. Such profiles could aid in the detection and identification of gifted underachievers.

### *Gender*

Research indicates that there are gender differences with regard to the causation, onset and development of underachievement in gifted individuals. In general, studies of the variables associated with gender-specific underachievement are needed if appropriate interventions are to be designed and implemented. More specifically, research indicates that in females underachievement is most problematic at post secondary levels. Developmental and cross-sectional studies of gender differences and underachievement are needed to determine whether the factors associated with later onset of underachievement are present at an earlier age.

### *Comparisons to Gifted Achievers*

In addition, in most research on underachievers, comparisons to their achieving peers are implicit; little has been done to directly compare a group of underachievers to a corresponding group of their achieving peers. Direct comparisons might turn up critical distinctions between the two that would shed light on why one group of students achieves at a high level while another group of similar ability, does not.

*Canadian Research*

Finally, virtually all research in the area of gifted underachievement used to guide educational thinking and practice in Canada has been done elsewhere, primarily in the United States. While it is implicitly assumed that the research is readily transferable, Canada and the United States do not share identical cultures nor education systems. Canadian research is necessary to determine whether research done in the United States and elsewhere is applicable to the Canadian experience, and if so, to what extent.

## **CHAPTER II**

### **REVIEW OF RELATED LITERATURE**

#### **Scope of Problem**

It is often assumed that children who demonstrate superior academic ability should, and do, achieve in school at levels commensurate with their ability (Ford, 1992). Unfortunately, there is a growing body of evidence that indicates that this is not necessarily the case (Feldhusen, 1994; Lupart & Pyryt, 1996). The publication of the "Nation at Risk" report in 1984 (National Commission on Excellence in Education, 1984) reported that 50% of all gifted individuals were not performing or achieving at the levels at which they were capable. This report lent credence to concerns that had already been advanced (Whitmore, 1980) and prompted researchers to investigate and examine the problem in greater depth. While figures and percentages cited in subsequent studies vary depending upon the definitions and criteria used, they tend to support the claim that a significant proportion of our highly able students is underachieving. The level of incidence of underachievement that has generally been reported tends to vary between 15% and 25% (Fine, Green & Tollefson, 1988; Kolb & Jussim, 1994; Lupart & Pyryt, 1996; McClelland, Yewchuk & Mulcahy, 1991).

In addition to the above mentioned works, evidence corroborating claims of underachievement can be found by comparing the academic habits and accomplishments of high ability students to their peers in other industrialized countries. Comparative studies have revealed that American students tend to read less, do less homework, and complete less challenging assignments than students in other countries (Feldhusen, 1994). Moreover, their performance on international tests of achievement tends to be disappointing. Feldhusen and Moon (1992) noted that only 5% of a

randomly selected sample of seventeen year old Americans could synthesize specialized reading material, only 6% could solve math problems requiring more than one step, and only 7% could draw conclusions based on material presented to them. Based on comparisons to their achieving peers, both inside and outside North America, many high ability students are not living up to their promise.

"National Excellence: A Case for Developing America's Talent" (Ross, 1994) is the United States Department of Education's most recent evaluation of programs and services for gifted and talented students. The publication of this study 10 years after the Nation at Risk document reaffirmed the claims of the original report, and subsequent studies, and again drew attention to the problem of bright, but underachieving students. It is disconcerting to note that in spite of the multitude of initiatives that have been undertaken on behalf of gifted and talented students in the past decade, an alarming proportion of them are still failing to reach their potential (Desmond, 1994; Feldhusen, 1994; Johnson, 1989).

Gallagher (1991, 1994) has called this underachievement a tragedy, at both the personal and the societal level. At the level of the individual it has been shown that a disproportionate number of gifted underachievers drop out of school and that, as a group, they are overrepresented in a variety of psychological problems and disorders (Dowdall & Colangelo, 1982; McClelland et al., 1991) ranging from anxiety (Redding, 1989, 1990) to suicide (Hayes & Sloat, 1987; Rimm, 1987). The underachievement is often a source of stress and frustration to the individual, the family, and the educators who deal with the student (Emerick, 1989). At the societal level the cumulative loss of the potential contributions of thousands of our top students cannot be easily estimated, but it does nonetheless represent a critical problem to our society (Gallagher, 1994). If a significant number of our most able students are failing to reach their potential society as a whole will fail to reap the benefits of

accomplishments and achievements that might have been. Given the magnitude of gifted students who are underachieving, the potential seriousness of the consequences, and the relative lack of success educators have experienced in their attempts to deal with the problem, more research is needed. Research efforts in this area have, however, been frustrated by problems of definition and by a lack of a conceptual framework to guide investigation.

### **Associated Problems in the Research Literature**

#### ***A Problem of Definition***

Research in the area of gifted underachievement has been complicated by an inability to arrive at a generally accepted and consistently applied definition of the term (Dowdall & Colangelo, 1982; Lafoon, Jenkins-Friedman & Tollefson, 1989). Both of the constituent parts of the term, though they seem reasonable at a general conceptual level, elude precise definition and measurement.

With regard to the definition of giftedness, most school districts in the United States and Canada use a variation on the Marland definition (Hoge, 1988; Hunsaker, 1994). Even this, however, is open to a wide range of interpretation in terms of which aspects of the definition are stressed and how they are measured. Though most research tends to focus on measures of general intellectual ability with minimal attention to variables such as leadership or kinesthetic ability, there is still room for a variety of interpretations and measures of this construct. Gagne (1992) noted that the degree of measured general intelligence required to be considered gifted varies considerably from a relatively liberal standard of an I.Q. of 120 to a more selective score of 140. In addition, there is disagreement over which tests are accurate measures of general intelligence and whether similar scores on different tests are equivalent.

The issue is further confused by definitions of giftedness that include performance as a requisite (Renzuilli, 1984, 1988). In such definitions if individuals with high potential are not performing or achieving at a commensurate level, they do not fit the criteria for giftedness. Thus, gifted underachievement becomes a contradiction in terms.

Attempts to arrive at an adequate and widely acceptable definition of gifted underachievement have been fraught with similar problems. Most studies employ variations on the themes developed by Whitmore (1980). Whitmore's conceptualization of underachievement was characterized by four clusters of attributes: duration, scope, intensity and discrepancy. Within this general definition there is again, however, a variety of emphases, interpretations and measurements that are used in the research.

Duration refers to the length of time a student underachieves. Fluctuations in achievement are not uncommon and may be caused by factors such as illness, loss, or even a change of teacher. In many cases, the underachievement is a temporary condition; it is only if it persists over a period of months that it becomes a cause for concern. Scope refers to the number of areas in which the student is underachieving. Underachievement may be confined to a specific skill, it may encompass a broad content area such as language arts or may be a generalized pattern of behavior evident across a wide range of subject areas. Underachievement can also be discussed and described in terms of the intensity or effect it has on the underachiever and others in their life. Responses to underachievement may range across a continuum from no evident negative effects to being sources of extreme anxiety and conflict. While all three of these traits may be legitimate components of our conceptualization of underachievement, measurement of the constructs and the establishment of critical cut off points is difficult and contentious. Of the four clusters of traits therefore,



discrepancy seems to be the one most emphasized and widely used in research. The other variables, though relevant, are usually implied, dealt with in a cursory manner, or not at all. Discrepancy refers to the procedures in which underachievement is revealed - the gap between potential achievement and actual performance. The magnitude of difference required for underachievement, and how it is assessed varies a great deal throughout the literature. Whitmore (1980) felt that the discrepancy could be expressed in a number of ways including: a) differences between high aptitude (as evidenced by measures of I.Q.) and low school grades or standardized test scores; b) a discrepancy between high standardized test scores and low school grades; or c) cases where measures of intellectual ability, standardized test scores, and daily achievement are all lower than what the individual is deemed capable of attaining. In this latter instance, the educator or researcher is forced to rely on subjective assessments and intuitive judgements, and the lack of objective measures and indicators make this type of gifted underachievement extremely difficult to detect and substantiate.

Most studies rely on objective measures, but even so, the size of this discrepancy and how it is measured varies a great deal from study to study. For example, Green et al. (1988) defined gifted underachievers as individuals who scored within the top 2% on the WISC-R and met any one of the following criteria: a C grade or less in one or more academics areas; failure to complete work at least 25% of the time as indicated by teacher records; and/or a one-year difference between expected and actual performance on a standardized achievement test. More recent work (McLelland et al., 1991; Redding, 1990) has tended to define underachievement in statistical terms. Redding (1990), for example, defined underachievement as grade performance levels one standard deviation below expected grade projections based on the student's previous achievement.

In 1982 Dowdall and Colangelo listed fifteen operational definitions of gifted underachievement from the previous literature. Research in the field in the intervening years has not been able to narrow the number of definitions to any appreciable degree. This does not necessarily mean, as they suggested, that the term gifted underachievement is virtually meaningless. Most researchers would still agree with Whitmore's general conceptualization of gifted underachievers as students who demonstrate exceptional potential for academic achievement but who are not performing at levels commensurate with their ability on daily academic tasks and achievement tests (Lafoon et al., 1989). The variety of operational definitions that exist, however, makes it very difficult to compare studies.

### *A Problem of Conceptual Framework*

In addition to the limitations imposed by problems of conceptualization and definition, there has not been a dominant theoretical framework or direction that has emerged to guide research, or to integrate the body of knowledge that already exists in the area of gifted underachievement. Researchers have tended to focus on very specific facets of underachievement and usually within very specific sub-populations. As a result, the picture that emerges is somewhat fragmented and at times, contradictory. Indeed, Dowdall and Colangelo (1982) have suggested that research in this area has resulted in more confusion than clarity.

Research into the factors that seem to be associated with underachievement in gifted students generally falls into five broad categories: personality characteristics and psychological attributes; relationships with others; gender differences; school-based variables and family variables. The relevant research in each of these areas will be outlined briefly.

### **Personality Factors and Psychological Attributes**

A number of personality factors, psychological attributes, and behavioral patterns have been associated with underachievement in gifted students. The relationship of these variables to underachievement is complex; it is not known if the variables are causal agents, the result of underachievement, or perhaps both. Underachievement may exacerbate the condition or factor that initially contributed to underachievement. The variables associated with underachievement may be, therefore, part of a self-perpetuating cycle. The personality factors and psychological attributes noted in the literature can be placed in four categories: self-esteem; attribution and motivation; locus of control; and work habits and organization.

#### ***Self-Esteem***

The characteristic cited most often in the research on gifted underachievement revolves around the concept of low self-esteem. Although some researchers (Feldhusen, 1985a; Gonzalez & Hayes, 1988) have suggested there are different types of self-esteem specific to a particular context (e.g. academic, social or athletic), most studies refer to a more global or holistic meaning referring to a general sense of low self-worth. Many researchers have reported general findings of low levels of self-esteem for gifted underachievers (Fehrenbach, 1993; Ford, 1992; Freeman, 1994; Greenberg, Coleman & Rankin, 1993). The lack of precision associated with this term is further complicated by researchers who have noted what appears to be the same attribute but have chosen different phraseology. For example, Krissman (1989) described the Trillium underachiever as lacking in courage; Maitra (1991) noted their lack of self-confidence; Gallagher (1991) discussed their feelings of inferiority; and Fehrenbach (1993), Silverman (1989), and Griffen (1988) have all described

underachieving children as being overly critical of themselves. While definitions are vague, and terminology varies, the central attribute of a general and pervasive sense of low self-esteem is widely associated with gifted underachievement.

The low self-esteem seems to be linked to other constellations of characteristics. A number of researchers have noted that underachievers often have unrealistic goals or aspirations (Fehrenbach, 1993; Silverman, 1989). They tend to set goals and have aspirations that are either impossible to attain, or that have a low probability of success. This tendency toward perfectionism (Fehrenbach, 1993; Silverman, 1989; Kitano, 1986; Whitmore, 1986) seems incongruous given the lack of achievement implicit in the very definition of this group. However, it may be that these perfectionist tendencies lead to a situation where students are unwilling to commit to any project or course of action where they might not be able to attain this unreasonable standard. They would rather not attempt a project than attempt it and (in their eyes) fail, even though the consequences in the educational setting (from the schools' or the parents' perspective) are identical. They are paralyzed by unreachable standards of perfection. It is not surprising that studies note that gifted underachievers are unwilling to take risks (Fehrenbach, 1993), withdraw from challenge (Krissman, 1982), avoid competition (Fehrenbach, 1993), and do not persevere (Gallagher, 1991; Olszewski-Kubilius, Kulieke & Krasney, 1988).

Emotionally, underachievers have been described as being acutely sensitive (Kitano, 1986) and less resilient than their achieving peers (Gallagher, 1991). They are vulnerable to feelings of disappointment, failure, and rejection. Moreover, they are less able to put such experiences in perspective and carry on once the event that precipitated that emotion is over. Research findings suggest they tend to be more anxious and "high strung" than their achieving peers (Freeman, 1994; Grau, 1986; Redding, 1990), and they have been described as being immature and more dependent

than higher achieving students (McClelland et al., 1991; Olszewski et al., 1988). This apparent conflict between their ambitions and their inability to attain them has not been fully examined in the research literature, and as such, could be either the cause or the effect of this anxiety.

### *Attribution and Motivation*

An aspect of the psychological profile of underachievers that is frequently cited in the research has to do with the notions of attribution and motivation. It has been found among gifted students that those who are high achievers tend to attribute their success to effort, more so than ability. With underachievers the reverse is true. They do not tend to see the relationship between effort and subsequent achievement outcomes (Jacobs & Weiss, 1994; Lafoon et al., 1989; Rimm, 1976; 1987; Whitmore, 1980). This factor may create a self-fulfilling prophecy. Inability to see the relationship between effort and outcome, in conjunction with unrealistic expectations and a tendency to withdraw from challenge, could contribute to the development of a poor work ethic and habits with the end result being lower academic achievement. This possibility has not yet been examined in the research literature.

### *Locus of Control*

Another key concept related to motivation is that of locus of control, or the extent to which one sees oneself as being responsible for, and in control of, the forces that impact the course of development of one's future. Most studies of this factor have noted that underachievers have an external locus of control - they tend to see themselves as being directed and controlled by outside forces (Ford, 1992; Lafoon et

al., 1989). Conversely, internal locus of control is common in achievers who tend to see themselves as a central force in shaping their future. This tendency has been reported in a number of studies (Ford, 1992; Lafoon et al., 1989; Redding, 1989), although at least one study of this factor found no significant difference (McClelland et al., 1991). In addition, Li and Adamson (1995) have reported gender differences with regard to locus of control. In their study of 169 high school students (94 girls and 74 boys), they found that the gifted females, more so than their male counterparts, tended to attribute success and failure to effort and strategy, both of which are internal and controllable. This difference might explain, in part, the lower proportion of female to male underachievers in primary and secondary schools. Research also suggests that if students are to achieve at levels more in keeping with their ability, they need to strengthen their self efficacy - the belief that one can prepare for, and become more successful at a particular endeavor (Howard-Hamilton, 1995; Kelly, 1993).

Finally, gifted underachievers tend to be less intrinsically motivated by tasks. Motivation to complete a task or achieve a goal will typically come from externally imposed sanctions such as grades, parental approval, or material reward, as opposed to from factors within the child, such as interest, challenge, or curiosity (Lafoon et al., 1989; Redding, 1989, 1990; Stevenson, Chuansheng & Shinying, 1993). Research suggests then, that for underachievers, both attribution and motivation tend to be linked to factors external to the individual. In contrast, for gifted achievers attribution and motivation tend to be associated with internal and/or intrinsic factors.

### ***Work Habits and Organization***

Not surprisingly, both the work ethic and work habits most often associated with success are found to be lacking in studies of underachievers. Underachievers tend

to have a generally negative attitude towards school work (Rimm & Lovance, 1992a; Silverman, 1989), and often fail to complete their assignments (Silverman, 1980; Rimm, 1991a). When work is handed in it is sometimes incomplete (Rimm & Lovance, 1992b) or done in a careless, haphazard manner (Rimm, 1991a).

A serious and related problem for gifted underachievers is disorganization (Ford, 1992; Rimm, 1991b). They often fail to adequately plan and manage their time and resources effectively (Van Tassel-Baska, 1989) and are often described as having a tendency to procrastinate (Grau, 1986; Rimm, 1991b; Van Tassel-Baska, 1989). By putting off work until the last minute, they limit their chances for success and increase the pressure upon themselves. While some researchers have noted underachievers are frequently described as being irresponsible, the underlying reasons for this disorganization are unclear. Numerous studies have characterized underachievers as being distractible and lacking in concentration (Ford, 1992; Freeman et al., 1994; Kitano, 1986; Silverman, 1989) or impulsive (Redding, 1989, 1990) - attributes common to learning disabled students. It may be that the two populations intersect to some degree and that underachievement on the part of some bright students is due to a specific but undiagnosed learning disability.

## **Relationships with Others**

### ***Relationship with Authorities***

Another constellation of descriptors commonly applied to bright underachievers deals with their attitudes toward and relationships with others. They tend to have a somewhat more negative outlook toward both life in general (Maitra, 1991; Lafoon et al., 1992) and school in particular (Kitano, 1986; Silverman, 1989). The latter is



most likely associated with their history of failure and frustration. Given this predominantly negative attitude, it is hardly surprising that there is often tension and friction between the underachiever and authorities, whether it is at home, at school, or in the community. Whitmore has noted that gifted underachievers tend to be rebellious in the classroom (1988) and resistant, in particular, to adult pressure (1980). Other researchers have noted the rebellious, non-conformist nature of the gifted underachiever (Rimm & Lowe, 1988; Silverman, 1989) and a tendency toward antisocial behavior (Dowdell & Colangelo, 1982; McClelland et al., 1991). The unwillingness of gifted underachievers to conform to adult standards may lead to a rejection of values that emphasize academic achievement and the importance of educational institutions.

### *Peer Relationships*

Even though gifted underachievers as a group may be more prone to rebelliousness and resistant to adult pressure and influence, they seem more vulnerable to peer pressure and influence than their achieving counterparts (Ford, 1992; Olszewski-Kubilius, Grant, & Seibert, 1993). They have been described as socially less mature than their peers - lacking the skills and abilities that would allow them to interact in a positive fashion (Dowdell & Colangelo, 1982; Wolfe, 1991). Lack of social skills, and lower levels of acceptance and positive interaction can lead to feelings of rejection by peers (Kitano, 1986), withdrawal from social activities (Wolfe, 1991) and loneliness (Grau, 1986). Withdrawal may exacerbate the initial problems of immaturity and generally poor social skills by not allowing the underachiever to witness, model, and practice the types of behaviors necessary for successful interaction. They may be caught up in a self-perpetuating cycle. As students approach adolescence, their peer group becomes increasingly important and influential (Muus, 1988). They

generally feel a need to be accepted by peers, to have friends they can confide in and gain support from (Van Tassel-Baska, 1989).

Although gifted underachievers are generally less socially adept and accepted by their peers, this does not necessarily mean that they are unaware of the peer group or that they do not care about peer relationships. In fact, the converse may be true. Rimm (1989) has observed that gifted underachievers are acutely aware of the pressure to be popular and be accepted by their peers. The nature of their peer groups may also have an impact on the child's achievement. Ideally high ability students will have peers of equal ability, and with commensurate academic interests (Whitmore, 1988). If not, there is the possibility that the pressure to fit into a group that does not value academic pursuits may cause them to deny their giftedness and hide the talents and abilities they possess (Gallagher, 1991; Gleason, 1988; Rimm, 1989; Whitmore, 1980; 1988). In some cases underachievement may be a choice based on peer group affiliation. This may be particularly true of gifted adolescent girls who feel not only the pressure to fit into groups but also pressure to conform to stereotypical sex roles (Callahan, Cunningham, & Plucker, 1994; Dowdall & Colangelo, 1982; Shore, Cornell, Robinson, & Ward, 1991). There has, however, been relatively little research to determine the extent to which the peer group can influence the academic achievement of gifted students (Glover, 1991). More research is needed to determine the extent of the influence, and how this may shift when variables such as age and gender are considered.

## **Gender**

The relationship between giftedness and underachievement has been the focus of a good deal of research in recent years. While underachieving males and females share

a number of commonalities in terms of causation and etiology, there appear to be some distinct gender differences in terms of incidence, causation, and onset of underachievement. Throughout elementary and secondary school, underachievement tends to be primarily a male phenomenon (Colangelo, 1993; Green et al., 1988; Whitmore, 1988; Wolfe, 1991). Estimates of the ratio of male to female underachievers vary from study to study but are estimated to be between 3 or 4 to 1 (Wolfe, 1991). Gifted female students, by way of contrast, seem relatively successful in the initial phases of schooling; underachievement becomes more prevalent at a later stage. For example, by the time females reach university or begin to pursue a career, they will be at greater risk for underachievement, particularly when assessed by variables such as career advancement or income level (Callahan et al., 1994; Howard-Hamilton, 1995). Although underachievement in gifted females generally manifests itself in post secondary or career contexts, it has been suggested in some research that it is linked to factors present at earlier periods of development that have subtle but significant influences on eventual achievement.

Johnson and Lewman (1990), for example, found that parents' perceptions of their children's abilities relative to hobbies and extracurricular interests and activities tended to split along gender lines. Parents of young girls tended to think their daughters were more capable when engaged in tasks traditionally associated with the female role. Whether or not their perceptions were accurate, is difficult to ascertain. However, the perception that certain behaviors are considered gender appropriate and consequently encouraged by parents may have a long term impact on the child's aspirations, development and achievement (Jacobs & Weisz, 1994). The impact may not be immediately apparent; it may manifest itself only in later years.

### *Patterns of Underachievement in Females*

Reis (1987) has suggested that female underachievement in school is a myth, whereas female underachievement in later life is a reality. Kelly (1993) found that women in the workforce felt they had talents that were not fully realized or utilized. Hollinger and Fleming (1992) reported that most of the women in their study had not realized their career and academic goals. For the most part, these studies lend support to the notion that female underachievement tends to occur later in life than it does in males. Able females tend to begin school as achievers, and then it appears that their values and interests begin to shift - at the onset of adolescence (Kerr, 1991; Lafoon et al., 1989; Whitmore, 1988).

At adolescence, gifted girls are confronted with numerous conflicting expectations. There is pressure on young girls to demonstrate highly feminine behavior, which, unfortunately, places a correspondingly low emphasis on intellectual behavior (Callahan et al., 1994; Howard-Hamilton, 1995). Part of the problem is the desire to fit in and form relationships; the other is that traditional female characteristics are often associated with non-academic pursuits. Other work, such as Howard-Hamilton (1995), has shown that high achieving gifted students, male and female, tended to endorse either traditional male or androgynous sex role characteristics. In a similar vein Kelly (1993) found high achieving males and females were more interested in pursuing traditionally male or gender neutral occupations and professions. It appears that for at least some gifted students, intellectual goals and femininity are believed to be mutually exclusive (Maitra, 1991).

### *Stereotypes*

Stereotypes of female traits and abilities are problematic for girls at both the psychological and societal level. At a psychological level young women may be given the message that they are not capable of attaining certain types of goals. These beliefs could fuel a cyclical process whereby lack of confidence could lead to diminished levels of effort or willingness to accept challenge. This could in turn lead to lower levels of achievement (Olshen & Matthews, 1987). Lowered self-esteem and reduced expectations are particularly difficult to change if other people who play a support role in the girl's development such as parents, teachers, and peers hold similar views.

A number of researchers (Callahan, 1991; Cramer, 1989; McCormick & Wolfe, 1993) have documented this effect on young females, particularly in math and science. Gifted girls tend to reject such pursuits in favor of more socially acceptable activities, and are, therefore, at risk of limiting their options for career development and personal satisfaction. Lower levels of achievement in these areas will in turn lead to lower career aspirations (Reis, 1991) and to a lack of adequate planning for the future.

Gender stereotypes are also influential at a broader societal level. Although overt discrimination has lessened, there may be more subtle, less overt attitudes and practices that prevent women from rising to their potential. This may discourage young women from attempting to break into the system, as well as limiting the number of appropriate role models for young women.

### *Mentors and Role Models*

The lack of female mentors and academic role models, particularly as they pursue advanced academic studies and careers, is problematic. While the majority of

teachers at the elementary level tend to be female, there is an increasing proportion of males teaching at the secondary and post secondary levels. This lack of female role models in education and subsequent careers may play a significant part in their underachievement (Reis, 1991). It would be interesting to investigate whether the preponderance of female teachers in the elementary system has a similar impact on male development and is possibly associated with the overrepresentation of male underachievers in the early grades.

### *Male Underachievement*

While the unique problems facing bright females and contributing to their disproportionate underachievement in later stages of life are serious and worthy of attention, this work may have overshadowed the fact that in the education system most bright underachievers are male (Colangelo et al., 1993). If, as has been suggested previously, males seem to enjoy at least some advantages relative to females, the reasons for their academic underachievement in grade school are even more perplexing. Some work has pointed out differences in motivation and attribution. Li and Adamson (1995), found, for example, that gifted females, were more likely than males to attribute both success and failure in academic subjects to internal, controllable variables like effort and strategy, as opposed to luck or ability. While some research does exist, there seems to be a paucity of work directed specifically to male underachievement. To fully appreciate the impact of gender and achievement more studies on this theme need to be carried out.

### *Summary*

The picture that emerges for the gifted underachiever is one of a child with exceedingly high, often unrealistic and unattainable expectations and goals. Such children typically suffer from low self-esteem and tend to be very critical of their abilities and achievements. They are likely to avoid competition and avoid challenging situations. They will tend to attribute their success and failure to ability and luck more than to effort and determination. They lack a sense of purpose or direction and will not expect success. Emotionally, they are less mature than their achieving peers, more sensitive, and less resilient to criticism or failure. They tend to be more anxious and high strung than achievers and have a higher incidence of emotional problems. The work habits of underachievers are characterized by procrastination, disorganization, and a failure to complete projects. They tend to be negative toward work and direction and are described as distractible, impulsive, and lacking in concentration. Their relationships with others are frequently troubled. They are often rebellious to authority and resistant to adult influence. Among peers, generally lower social skills and immaturity, coupled with a desire for acceptance makes them vulnerable to peer pressure.

Gender differences are also evident. While males tend to be proportionately overrepresented at all levels of grade school, the pattern and development of gifted underachievement seems to vary considerably between males and females. In most studies underachievement in gifted males is present early on, and the relative number of underachievers seems to remain constant. With gifted females, underachievement tends to become more pronounced at the post secondary and career level.



### **School-Based Factors**

Within this general category dealing with the relationship of the underachiever to the school environment, a number of sub-themes have been researched and explored. These subtopics range from general attitudes to school and school environment, to the role of the teacher, learning styles, subject preferences, career aspirations and extra curricular involvement.

#### ***Attitudes Toward School***

With regard to the first category, attitudes toward school, Maitra (1991) found that the magnitude of the correlations between both general attitude and achievement, and attitude to specific subjects and achievement increased as the students progressed through school. Student attitudes to school and the subject were partly a function of how well they had performed in the past. To the extent that attitude seems to both reflect and affect achievement, this might suggest that while a poor attitude to school or a particular subject can be ameliorated or offset by other factors in early years, by the time students reach secondary school attitude assumes greater importance. This research is particularly troubling when considered in conjunction with Freeman's research (1994) that found that most gifted students enter school with a positive attitude but fail to maintain their enthusiasm. Attitudes toward school among brighter students become less positive as the students progress through school, and unfortunately, becomes an increasingly significant factor in student achievement.

The reasons for dissatisfaction with school vary but the type of institution involved does not seem to be a factor. Colangelo, Kerr, Christensen, & Maxey (1993) found that neither public nor private schools were demonstratively better than the other

in fostering positive attitudes to education. The degree to which students were positive or negative had more to do with factors intrinsic to the individual institution, such as quality of classroom instruction, or availability of guidance services. A significant difference was noted in terms of both the size of the high school and the size of the community in which it was located. Underachievers were twice as likely as achievers to live in cities of over 250,000, and half as likely to live in small towns with a population of between 2,000 and 10,000. Underachievers were also more likely to attend high schools of greater than 200. The researchers did not speculate on the reasons for these differences but generally, a smaller setting in terms of both community and school seems to be more conducive to higher levels of achievement.

Some schools seem to foster underachievement by setting higher priority for social events and athletic endeavors than for intellectual development, and preparation for higher education (Gallagher, 1991; Rimm, 1991a). In such cases students are implicitly given the message that academic achievement is not as important as other activities, and this may in turn have a negative impact on their priorities and attitudes to academics (Tannenbaum, 1991).

In some schools as well there is a prevailing attitude that sees gifted education as elitist. Students enrolled in such programs, in order to meet legitimate educational needs may experience resentment or even antagonism (Hunsaker, 1993). Schools with this type of prevailing attitude tend to place a greater emphasis on fitting in, or being well adjusted - relative to the rest of the school community. Students may underachieve in an attempt to adapt to these expectations.

Further, this type of school atmosphere may be particularly problematic in that Rimm (1987) found that many gifted underachievers feel some pressure to be creative and that this pressure may push them to non-conformity. If the school values and promotes conformity, gifted students may find the environment restrictive to their

attempts to express their individuality and consequently, they become frustrated. The rebelliousness to authority and poor attitudes to school that characterize many underachievers could be exacerbated in this situation.

Another element related to general school environment - type and degree of competition - was part of a treatment program developed by Supplee (1989). The program attempted to reduce competition through a variety of cooperative sports, games, and trust-building exercises. Academically competitive situations were diffused somewhat by individualized instruction in a cross graded, multi-aged classroom. This emphasis discouraged the idea of comparison with others and focussed on development within the individual. A reduction in the degree of competitive pressure improved both the students attitude toward school (as measured by Academic/school subscale of the Coopersmith Self-Esteem Inventory) and their academic growth (as measured by the Woodcock Johnson Achievement Battery, part II). Results of this study suggest that relative emphasis of cooperation and competition within the school may be a contributing factor in the underachievement of some gifted students.

### *Teachers*

Among the factors related to the school achievement of gifted students, the role of the teacher is pivotal. The research literature reveals that teachers' attitudes toward, and expectations of the gifted (Kolb & Jussim, 1994; Whitlock & DuCette, 1989), the personality attributes they possess (Maitra, 1991), their relationship with their students (Whitmore, 1980), their ability to design and present curriculum (Hansen & Feldhusen, 1994), and their provision of feedback and reinforcement that will enhance and promote student growth (Jacobs & Weisz, 1994) place them at the center of a variety of factors that impact achievement. For these reasons teachers may be the single most

important factor influencing student achievement (Emerick, 1989; 1992). Key areas associated with teachers and gifted underachieving students will be briefly outlined.

### *Attitude and Understanding*

The attitude of teachers toward their students is probably the most fundamental component of their interaction with students. All efforts and endeavors teachers undertake on their students' behalf are predicated on these underlying attitudes. In order to be helpful to gifted students, teachers at the most basic level have to appreciate these students' abilities and attributes (Hansen & Feldhusen, 1994). Unfortunately, some teachers tend to have negative attitudes toward their brighter or gifted students (Hunsaker, 1993; Seeley, 1985), or hold a variety of erroneous misconceptions that can foster student underachievement. It seems paradoxical that in a profession where one of the primary goals is to foster individual growth and achievement, students at the upper ability end are sometimes resented or neglected (Feldhusen, 1989). Leder's (1988) study, for example, found that at the junior high level, teachers had proportionately less time for high ability students. As well, teachers not trained in gifted education tend to spend more time with slower students (Hansen & Feldhusen, 1994).

Teachers may also hold a variety of misconceptions about gifted students that could be potentially damaging. This is particularly true with regard to expectations. In order to maximize achievement teachers must tread a fine line: their expectations need to be high (Maitra, 1991) but tempered with realism (Emerick, 1992). If teachers believe all learning is easy for all gifted students, they may expect too much and tolerate less errors. These expectations can feed tendencies toward perfectionism that can paralyze the academic growth of some students and contribute to underachievement

(Whitmore, 1988). Conversely, if teachers expect too little from high ability students, and work is too easy, students will not be challenged to do their best (Kolb & Jussim, 1994). If they can get by with little effort, they may not develop an appreciation of the relationship between effort and achievement. This attribution may be an important factor in underachievement (Fehrenbach, 1993; Lafoon et al., 1989). These studies would seem to indicate that in order to facilitate growth and achievement among the gifted, teachers need to develop a more positive attitude toward them and a greater understanding of them.

### ***Personality and Personal Attributes of Teachers***

In addition to attitudes and expectations, the personality characteristics and personal attributes of the teacher, as well as the relationship the teacher is able to form with the student are critical factors in student achievement (Rimm, 1987; Whitmore, 1988; 1980). Research on these factors has found there is a constellation of personal qualities and interpersonal skills that tend to be associated with higher achievement among more able students (Seeley, 1985). Bright students respond better to teachers who are humane, caring, and genuinely concerned about the welfare and well being of each of their students (Emerick, 1992; Maitra, 1991; Van Tassel-Baska, 1989; Whitmore, 1988). While teachers who are firm and in control elicit respect and higher achievement (Freeman, 1994; Whitmore, 1980) it is, at the same time, important that they not be overly strict and authoritarian (Freeman, 1994). Studies indicate students show the least growth with teachers they fear (Maitra, 1991; Whitmore, 1980) and rigid authoritarian teachers have been found to suppress the creativity in more able students (Gleason, 1988). Teachers who are more flexible (Hansen & Feldhusen,

1994), collegial, and egalitarian (Dunn, 1993), are generally able to elicit more positive results.

Bright students also expect a higher level of academic competence from their teachers (Emerick, 1992). Successful teachers of the gifted are themselves often described as bright, highly intelligent, and insightful (Hansen & Feldhusen, 1994; Hertz, 1989). Intellectual ability alone, however, is not sufficient. Superior communication skills, and confidence, energy, and enthusiasm for their discipline are also cited as important qualities in teachers of gifted students (Emerick, 1992; Feldhusen & Hansen, 1994; Hertz, 1989; Maitra, 1991).

### *Curriculum Development and Methodology*

While underlying attitudes and personality characteristics form the foundation for successful teaching, they must be augmented by methodological techniques and practices that will encourage and reinforce achievement among highly able students. Inappropriate curriculum design and implementation seem to be important factors in gifted underachievement (Feldhusen, 1989; Lemley, 1994; Redding, 1989). When designing curriculum to challenge and motivate bright students, a number of factors need to be considered.

First, successful teachers of the gifted use a wider range of resources (Hansen & Feldhusen, 1994). They are better able to challenge students at a variety of levels and provide information in a fashion and format to suit unique individual needs.

As well, tasks must be presented at an optimal level of difficulty (Redding, 1989). Tasks that are too easy promote lack of effort and lead to boredom (Rimm, 1991b; 1987), and projects that are too difficult will only frustrate them (Rimm, 1991b).

Another important factor that is sometimes overlooked in developing curriculum is whether or not the learning activity is fun (Emerick, 1992; Middleton, Littlefield & Lehrer, 1992). Not all students will be motivated by ideas at a conceptual level; ideas need to be embedded in projects and assignments that will pique the students' interest and draw them into a greater exploration of those ideas (Middleton et al., 1992; Redding, 1989). A study of the academic interests of a sample of children in grades three to seven (Middleton et al., 1992) found that it was the level of control and arousal that made an academic task fun for students. Opportunities that offered novelty and a degree of complexity and uncertainty were found to be more intrinsically interesting. These types of learning situations stimulated curiosity, provided challenge, and offered the opportunity to take risks. The authors concluded that if students can be shown that learning and its applications are fun, they will be more motivated to learn not just that task, but possibly others as well.

Motivation and learning can also be enhanced if students are allowed to have a sense of control over their learning (Hansen & Feldhusen, 1992; Redding, 1989) and input in the development and design of their products (Westberg, 1995). Allowing students to share in the development of curriculum and to assume greater responsibility for their education might also help develop an internal locus of control. Learning could be seen to be less a product of external forces than a result of internal variables - interest, intrinsic motivation and individual effort. Gifted students' reported preference for independent work (Emerick, 1992; Middleton et al., 1992) might stem at least in part from the benefits associated with students taking more responsibility for their own learning.

It is also possible that if students are allowed greater input and responsibility for their learning, they may design the learning experience in a manner more consistent with their own individual learning styles. This component of learning will be discussed

in greater detail subsequently, but there is evidence to suggest that students' performance improves when the method of presentation matches their preferred learning style (Cropper, 1994; Redding, 1990).

Another aspect of curriculum design that has also been found to be important in the treatment of underachievement is depth of study. Bright students are frequently not satisfied with a cursory or superficial treatment of a topic, they require opportunities for more in depth study (Emerick, 1992; Hansen & Feldhusen, 1994; Lemley, 1994), that will allow for a more complete understanding.

In addition, while factual knowledge is important insofar as it provides a foundation for subsequent development, there should be a balance between rote and discovery learning (Rimm, 1987), and between drill exercises and those that require a creative application of ideas.

Relevance has also been found to be a factor in underachievement. Ideally students should see a connection between the topic being studied and their own experiences (Emerick, 1992; Redding, 1989).

### ***Feedback and Reinforcement***

The type of feedback, reinforcement and support a teacher provides can have a tremendous impact on student achievement (Ford, 1992; Jacobs & Weisz, 1994; Rimm, 1985). It can help shape the students' perceptions of themselves and provide them with a sense of competence (Van Tassel-Baska, 1989). This sense of self-efficacy and belief in oneself is important to all learners, but may be particularly in some subgroups of bright underachievers such as adolescent girls (Jacobs & Weisz, 1994) or young black males (Ford, 1992).



In providing support for gifted individuals an attempt should be made to foster intrinsic motivation. More successful teachers of the gifted tend to place less emphasis on extrinsic motivation such as grades (Hansen & Feldhusen, 1994). In fact, some studies have shown that for students who are intrinsically motivated, too much external motivation may actually decrease their performance (Redding, 1989). When grades are assigned, the relationship between effort and performance or end product should be stressed. Bright students need to realize that work is required in order to be successful. While it is important to demonstrate this in evaluation and feedback, it is equally important to provide challenging situations where genuine intellectual effort is required and rewarded (Redding, 1989). Receiving marks for easy work may reinforce the idea that achievement is easy and relatively effortless.

Another issue that needs consideration when discussing how best to reinforce achievement, is competition. While it may be useful in motivating some students, there is ample clinical work to suggest that for bright underachievers it would be more profitable to concentrate on growth within the student (Rimm, 1987). This type of focus removes the pressure of having to live up to external standards, aids in the development of realistic, attainable goals, and internalizes standards of achievement.

### *Learning Styles*

Although the issue of appropriate curriculum has already been mentioned, a particular facet of curriculum design - learning styles and preferences - is significant enough to merit a more detailed discussion. Redding (1989) stated that underachievement in gifted children may well be the result of a "mismatch between the schools' curriculum and testing procedures and these children's learning styles" (p. 275), and that school achievement can often be viewed as a function of the relationship

between learning style and learning environment. Hence, teachers need to be cognizant of the learning styles of all students so that the program can be successfully adapted to meet their needs (Cray-Andrews, 1989; Griggs & Dunn, 1984). Research indicates that there may be a core of characteristics common to many gifted underachieving students that predispose them to be less successful in formal school situations.

The first major set of variables to be considered is that of convergent versus divergent thinking. There is evidence to suggest (Redding, 1990, 1989; Seeley, 1985b; Toth & Baker, 1990) that although gifted underachievers do as well as their achieving peers on tasks requiring holistic processing, they do not fare as well on more detailed computational tasks which require precision, attention to detail, or convergent problem solving. A preference on the part of some students to learn in a more holistic fashion, coupled with a resistance to, and rebellion against pressure in some traditional classrooms to think in an analytic, convergent manner (Toth & Baker, 1990; Whitmore, 1980) may be in part responsible for underachievement in some gifted students. Even where there is opportunity for divergent thinking, the time constraints operating in a regular classroom may be a source of frustration. Bright students may generate too many ideas to pursue within the framework of the classroom and the teacher may be forced to invoke premature closure.

A second set of variables related to underachievement and learning style involves the preferred modality by which students take in and process information. Research indicates that although gifted students tend to develop their visual modality throughout junior and senior high school, tactile-kinesthetic preferences remain high, and auditory preferences remain low throughout their schooling (Dunn, 1993; Dunn & Price, 1980; Griggs & Dunn, 1984; Ricca, 1984). Silverman (1989) has suggested that many gifted underachievers may suffer from auditory sequential processing deficits. Such deficits, combined with a more holistic approach to learning might

predispose gifted underachievers to learn in a visual or kinesthetic fashion and could pose difficulties in academic settings where allowances for such differences are not made.

Gifted underachievers have also been found to possess a greater desire for novelty (Dunn, 1993; Griggs & Dunn, 1984), and a preference for learning situations that allow for greater mobility and sound (Dunn, 1993; Geffen, 1988). The latter two preferences are particularly pronounced in males (Dunn, 1993).

This research has a number of implications for subject area preference, subject specific underachievement, and the relationship of both grade level and gender to these two variables. First, it suggests that underachievement might be subject specific, and concentrated primarily in academic areas; subjects such as computers, band, or technical arts that contain a kinesthetic component would likely be preferred to academic subjects that do not. Furthermore, it might be predicted that the tendency to underachieve in academic areas would be particularly pronounced at junior and senior high school levels. Elementary schools, with a greater focus on thematic units and integrated curriculum, might be able to accommodate kinesthetic learning styles to a greater degree.

In addition, subjects such as language arts or social studies, where auditory and visual learning experiences are more prevalent might be the least favorite subjects and the subjects with generally lower levels of achievement. It would also be predicted that gender differences in learning styles would be reflected in subject preference and subject specific achievement. Males would be expected to have higher levels of underachievement, particularly at the higher grade levels where there may be less accommodation for a variety of learning styles. Furthermore, their achievement would tend to be concentrated in subjects with a relatively high kinesthetic learning

component. Subject preference and achievement would probably be particularly low in language arts and social studies.

The final aspect of learning styles to be addressed involves whether students learn best working individually, or in groups, and if so, what types of group structures are most effective. The issue of independent study has been studied extensively but the results are inconclusive. Reasons for discrepancies are unclear. The relative success or failure of a particular independent study could be dependent on other variables such as student control, time constraints or learning styles.

With regard to grouping and achievement, the evidence is somewhat more consistent. Li and Adamson (1992) studied gifted achievers and found that a cooperative learning style was not significantly preferred for any subject matter by either males or females and that in some subjects, such as math, both males and females preferred an individual approach to work to a cooperative one. Similarly, Feldhusen and Moon (1992) reported that the use of heterogeneous grouping and cooperative learning actually led to lower levels of achievement and motivation among gifted students. While having gifted students work with other students of varying ability may provide social benefits, it does not seem to promote their own learning and achievement.

It is possible that the learning styles of the individual will have long term implications for the child's educational career, not just in terms of achievement, but also in terms of subject preferences, goals and subsequent career aspirations and choices. This area may be important to the understanding of gifted underachievement and consequently needs to be examined further.

### *Subject Preferences*

Studies of subject preferences have found differences between achievers and underachievers, as well as differences among underachievers, with a split occurring along gender lines.

Colangelo et al. (1993) found, not surprisingly, that achievers more so than underachievers aspire to higher levels of education and desire a greater number of honors courses. He also found that the career profile or orientation of achievers tended to be directed more to engineering or health professions, while underachievers seemed drawn more to fine arts and social sciences.

The difference in career orientation between the two groups may be related to their relative levels of achievement in subjects related to those careers. In this study (Colangelo et al., 1993) the scores of gifted achievers and gifted underachievers on each of the four subtests of the American College Testing Program were compared. The differences between the two groups were most pronounced on the mathematics subtest, while no difference was found between the groups with respect to social studies scores. While the relationship between mathematics achievement and engineering and the health professions, and between social studies achievement and the social sciences seems straightforward the underlying reason that achievers outperform underachievers on tests of mathematics is unclear. Colangelo et al. (1993) suggested that mathematical ability may be a key factor differentiating between achievers and underachievers. Differing learning styles might offer one possible explanation, in that fine arts and the social sciences could allow for a more holistic, less convergent, approach to learning. Clearly, more research is needed to determine whether there is a relationship between learning styles and achievement in particular subjects among gifted students.

Differences in subject preferences have also been reported between males and females. In the early to intermediate years of schooling gifted boys report physical

education and computers/technology as their favorite subjects, whereas gifted girls tend to prefer art, spelling, and special gifted classes (Middleton et al., 1992). In a similar vein, Li and Adamson (1995) found gifted girls possessed greater confidence and interest in English than gifted boys. Li and Adamson (1995) did not find any differences in terms of mathematics or science achievement, although other studies have reported that gifted girls show less interest in mathematics than their male counterparts (Grau, 1986), and of those students achieving at a high level in math, a disproportionate number tend to be male (Stevenson et al., 1993). Again, while it could be noted that subjects such as physical education and technology traditionally incorporate a greater kinesthetic component and English more auditory, a multitude of other factors preclude making a definitive link between learning style and subject preference. However, this would seem to be a promising area of investigation.

### *Extracurricular Activities*

While much has been written about the achievement of students within the context of the classroom, comparatively little has been written about the accomplishment of gifted achievers and underachievers outside the classroom. This is unfortunate because there is evidence to indicate that extracurricular activities play an important role in the development of the student. Emerick (1992) has outlined a number of potential benefits of extracurricular activities that are of particular relevance to the study of gifted underachievers.

Outside interests and activities provide a reprieve from unpleasant school situations, and can help bolster the self worth of students. Even if school situations are unrewarding, the students can at least experience success in some aspect of learning and development. If their schoolwork is not interesting or challenging, bright

underachievers might channel their energy into these extracurricular activities (Whitmore, 1986). Involvement in out-of-school activities might also help maintain a love of learning or even help identify in-school experiences of relevance to the students' interests and strengths (Emerick, 1992). Finally, Redding (1989) maintains that extracurricular involvement might be more indicative of accomplishments in later life than grades alone, because self-initiated tasks and accomplishments are more representative of functioning under real life conditions.

Unfortunately, research suggests underachieving students will be less active and accomplished outside the classroom than their achieving peers (Callahan, 1991; Colangelo, 1993), even though their families attempt to provide the same type of lessons and enrichment activities that high ability achievers receive (Rimm & Lowe, 1988). Underachievement appears to be not just a classroom phenomena, but a more pervasive approach to learning and achievement in all endeavors.

### *Summary*

The nature of the educational institution, teacher qualities, curriculum design, and accommodation of learning styles are all associated with underachievement in gifted students. School size, the perception that the school places relatively low priority on academic excellence, the degree of competition within the school, and negative attitudes toward gifted and gifted programming all seem to contribute to underachievement. Teachers are also believed to be an important factor. Teachers who are accepting and positive in their attitudes toward the gifted, possess mastery of their content areas and an enthusiasm for sharing it, and who are generally more flexible and egalitarian are usually more successful with gifted students. Successful teachers of the gifted need to be able to modify the curriculum so that it combines

appropriate challenge with activities students will enjoy. Teachers also need to be able to recognize and to accommodate a variety of learning styles. Gifted underachievers tend to show a preference for holistic learning situations, ones that incorporate a tactile or kinesthetic element, and often for learning environments that incorporate movement and sound. Finally, it is thought that the pattern of learning styles gifted underachievers tend to have predisposes them to prefer some subjects over others. Gifted achieving students seem to prefer subjects and career paths that involve mathematics and natural sciences while gifted underachievers show a greater preference for fine arts and social sciences.

### **Family Variables**

In addition to school-related variables, extensive research has been carried out on the role the family plays in influencing levels of achievement. Some researchers believe the family environment may, in fact, be the single most important affective variable affecting student achievement (Maitra, 1991; Van Tassel-Baska, 1989). While underachievement is possible in virtually any family structure or situation, there is a constellation of family environment factors that tends to be associated with underachievement (Geffen, 1992). At the most basic level underachievement seems to be related to the degree of stability and conflict present in the home environment (Feldhusen, 1992; Greenberg, 1992). Stability refers to the family's socioeconomic status, the family structure and organization, or the relationship between or among the various family members. Research evidence in each of these areas will be briefly reviewed.



### *Demographic and Socioeconomic Variables*

Olszewski-Kubilius et al. (1994) suggested that large families, or families from a lower socioeconomic strata, might not be able to provide the adequate resources or the support to foster achievement in high ability students. Greenberg's (1993) findings tend to corroborate the negative impact poverty has upon achievement. Poor families, to the extent that poverty is a reflection of their own achievement, may not model either the skills or goals and aspirations necessary for high achievement. Neither family size (Colangelo & Dettman, 1982; Rimm, 1988) nor level of parent education (Stevenson et al., 1993) seem to be significant factors in underachievement.

Other factors related to socioeconomic status, specifically single parent families, do appear to be significantly associated with gifted underachievement (Olszewski et al., 1994). A single parent may have less financial resources to provide support for the child's development and aspirations. They might also have less time to encourage, nurture and help develop the child's talents - particularly if there are other children in the family. Studies indicate that the prognosis for achievement is best if at least one parent carefully monitors and follows the academic progress of the child (Van Tassel-Baska, 1989).

In addition, most single parent families tend to be headed by females. The influence of a male figure in the home has been found to be associated with the development of talents and abilities in the gifted, among both girls (Van Tassel-Baska, 1989) and boys (Gelbrick & Hare, 1989). For gifted achieving girls it is most often the father who encourages the girls to be assertive. Mothers tend to send the message that daughters should adopt a more passive role, an attitude that may not be conducive to high achievement. While it might be expected that girls would identify more strongly with their mothers, Rimm and Lowe (1988) found 50% of gifted underachieving girls identify more strongly with their father. Although it is not clear

how and why fathers have such an influence over achievement and underachievement, they do seem to play a pivotal role in the child's development (Geffen, 1992). Hence, this needs to be examined further.

A strong positive male figure is also important to the development of gifted boys (Gelbrick & Hare, 1989). Geffen (1992) found that among high achieving students, personality traits and family perceptions are more frequently related to the same sex parent. In some instances the extended family can become important in the child's life to either replace or augment parental support (Van Tassel-Baska, 1989). They might be particularly important in disadvantaged families with one parent absent.

### *Involvement and Expectations*

Although economic and family structure variables seem to play a role in the development of high achieving students, it is the involvement, expectations, and parenting skills that appear to have the greater influence. If parents lack interest and are not involved in their child's education, the child's level of achievement suffers (Maitra, 1991; Whitmore, 1980). Parents concerned about, and involved in their child's education tend to have both high aspirations for, and expectations of, their children. Parental aspirations and expectations have both been associated with achievement in high ability students (Colangelo & Dettman, 1982; Van Tassel-Baska, 1989). Freeman (1994), for example, found that as the gifted grow older the gap in intellect and achievement widened between students from non-supportive homes and those from homes where parents supported the child, expected, and demanded high levels of achievement.

Even though high standards and expectations seem necessary (Grau, 1986), they must again be tempered with good judgement. Some gifted students are pushed too

hard (Maitra, 1991). As with teachers, if parental expectations are too high it may place undue pressure on the child, promote perfectionism and lead to decreased levels of achievement. Demands that are too low lead to boredom and lower achievement.

Once reasonable expectations are set they must be consistently followed by both parents. Consistency between parents seems more important than any particular parenting style (Rimm, 1990; Rimm & Lowe, 1988). Students benefit from consistent expectations and predictable outcomes. Clinical work with gifted underachievers has revealed that parental expectations are usually unclear and that limits and standards fluctuate both between and within parents (Rimm, 1991b). Rimm (1988) has suggested that among underachieving students, the lack of consistent leadership by parents is a recurring theme.

The issue of leadership extends into other domains. While children need a degree of independence and power, it needs to be age appropriate. Parents who abdicate the leadership role can have disastrous effects. Rimm's (1990) study of underachievers' families found that many of these children had excessive power in the home. For example, 95% said they could usually get their parents to change their minds.

Parents of achieving gifted students tend to be much more involved in the child's life than do parents of underachievers. They encourage independence but do not give a child more than they can handle (Rimm, 1987). They tend to take a much more active role in managing their child's extracurricular activities and their social environment (Olszewski et al., 1994), they monitor school progress carefully (Van Tassel-Baska, 1989), and they plan for at least one family activity daily (Rimm, 1990). These observations by clinicians and practitioners in the field of gifted underachievement need to be supported by research. Corroborating evidence from such work could provide information that would assist in early identification and

development of treatment programs for gifted underachievers, as well as appropriate direction and guidance for their families.

### ***Reinforcement and Encouragement***

Parental authority, high but reasonable standards, consistency, and active involvement in children's education are key factors in achievement. They should, ideally, be coupled with encouragement in the context of a positive family environment (Callahan et al., 1994; Emerick, 1992; Olszewski et al., 1994). While it may be relatively easy to maintain a positive attitude toward, and relationship with children if they are achieving at a high level, it is equally important to do so if children are underachieving (Whitmore, 1986). While underachievement will be frustrating for parents, a calm, caring, objective, and positive approach will be necessary if the pattern of underachievement is to be reversed (Emerick, 1992). Gifted achievers are more likely to have accepting affectionate parents; gifted underachievers frequently experience parental hostility and rejection (Colangelo & Dettman, 1980). Indeed, while this may be the result of underachievement, it can also exacerbate the situation and cause further problems.

Parental encouragement and reinforcement appear to be important to children's academic success. This must, however, be tempered with good judgement. A distinction should be made between what is a basic expectation and what is really a noteworthy achievement. If children are rewarded in a similar fashion for all accomplishments, they may not differentiate between the two. Not only do excessive amounts of praise possibly demean their value; they are also difficult to maintain. Once established it may be difficult to reduce the level of praise without also reducing the level of achievement (Rimm, 1990). Claims of the importance of parental

encouragement as well as the impact of modelling, to be discussed subsequently, are based primarily on the observations and conclusions of experienced clinicians. Again, research on these variables to corroborate and extend the knowledge base is needed.

### *Modelling*

Finally, with regard to parenting, what parents do are at least as important as what parents say. For better or worse, parents provide very influential role models (Rimm, 1991a). It is not enough, however, to expect and to support high achievement from children or even to act as a model of high achievement. Parents need to communicate the nature of their work and the satisfaction they derive from it. Parents of underachievers tend to communicate their frustrations and problems - irrespective of their achievement or accomplishments (Rimm & Lowe, 1988). In addition to seeing the end product and satisfaction associated with achievement, children must also be aware of the hard work and effort that have led to the success if they are to make the proper attributions. They need to see that accomplishment is the result of effort, not just luck or ability (Rimm, 1987; Rimm & Lowe, 1988).

Finally, parents need to model continual growth and development in both their careers and personal lives if they hope to influence their children to do the same.

### *Summary*

A number of variables associated with the socioeconomic status, structure, and dynamics of the family unit have been associated with achievement levels in gifted children. Poverty, single parent families, and in particular the absence of the father are all mentioned in the research as significant factors associated with underachievement.

Within the family structure, parents of achievers tend to be more involved in, and to exert more control over both the education and social life of their children. High but attainable standards are set, monitored and reinforced in an appropriate and consistent fashion. Finally, gifted achievers tend to have parents who are positive models of achievement; they demonstrate both the attributes associated with achievement and the satisfaction derived from it.

### **Consolidation of Research**

The literature in the field of gifted underachievement is complex and, for the most part, not well integrated. Research and clinical studies have identified almost one hundred variables that seem to be associated with underachievement in gifted students. To provide an overview of the literature, the variables have been presented in chart form (Table 1). In addition to listing the variables (in the order in which they were discussed in this chapter), columns on the chart indicate:

- a) the general body of research from which the information was obtained (gifted underachievement, gifted, and underachievement);
- b) whether or not age and gender differences with respect to each variable have been noted in the literature;
- c) the nature of the study(ies) that provided the information (clinical work/observation or research design); and
- d) emergent questions (gaps) which are noted in footnotes.

The semblance of order this chart creates is, however, probably more illusory than real. The variables have been classified and placed into broad categories to provide an overview of the literature. There is, however, no indication as to which of

the categories is most significant or whether it may vary with the individual. Research has yielded competing claims. In addition, the nature of the relationships among these variables remains largely speculative and poorly understood. While it is assumed they are intertwined and fit together to form a complex pattern or series of patterns, the type and number of relationships and patterns are not known.

**Table 1**  
**Summary of Variables Related to Underachievement in Gifted Students**

Variables	Target Group			Kin Variable		Evidence Source	
	Gifted Under-achievers	Gifted	Under-achievers	Age Variable	Gender Variable	Clinical/ Observation	Re-search

**PERSONALITY  
FACTORS**

1. <b>Self-esteem</b>	*	*				*	*
a. unrealistic goals/ aspirations	*						*
b. perfectionistic	*					*	*
c. unwilling to take risks	*						*
d. avoid competition	*						*
e. do not persevere	*						*
f. acutely sensitive	*					*	*
g. less resilient	*						*
h. vulnerable	*						*
i. anxious/high strung	*					*	*
j. immature	*						*
k. dependent	*						*
2. <b>Attribution and Motivation</b>							
a. effort vs. ability	*	*					*

Variables	Target Group			Kin Variable		Evidence Source	
	Gifted Under-achievers	Gifted	Under-achievers	Age Variable	Gender Variable	Clinical/ Observation	Re-search

### 3. Locus of Control

a. internal vs. external locus of control <sup>1</sup>	*	*			*		*
b. self-efficacy	*	*					*
c. internal vs. external motivation	*	*			*		*

### 4. Work Habits and Organization

a. negative attitude to school <sup>2</sup>	*					*	*
b. failure to complete work	*					*	*
c. careless work	*					*	
d. disorganization	*					*	*
e. procrastination	*					*	*
f. distractible/poor concentration <sup>3</sup>	*						*

## RELATIONSHIP WITH OTHERS

### 1. Relationship with Authorities

a. negative outlook/ attitudes	*						*
b. problems with authority	*					*	*
c. rebellious	*					*	*
d. non-conformist	*					*	*
e. anti-social tendencies	*						*
f. vulnerable to peer pressure	*						*

<sup>1</sup> relationship to work habits; gender differences

<sup>2</sup> different from achievers

<sup>3</sup> link between gifted underachievement and gifted learning disabled



Variables	Target Group			Kin Variable		Evidence Source	
	Gifted Under-achievers	Gifted	Under-achievers	Age Variable	Gender Variable	Clinical/ Observation	Re-search
g. socially immature <sup>4</sup>	*						*
h. feelings of rejection <sup>4</sup>	*					*	*
i. withdrawal/ loneliness <sup>4</sup>	*						*
2. <b>Peer Groups</b>	*	*	*			*	*
a. need for acceptance	*					*	
b. need for intellectual peers <sup>5</sup>	*						*
c. underachievement as a result of peer group affiliation <sup>5</sup>	*			*	*	*	*
d. sex role stereotypes	*			*	*		*
<b>GENDER</b>							
1. <b>Parental Perceptions of Ability</b>	*	*			*		*
2. <b>Onset of Underachievement</b>	*	*	*	*	*		*
3. <b>Gender Stereotypes</b>	*	*					*
a. Lowered self-esteem	*	*		*	*		*
4. <b>Role Models</b>	*	*					*
a. Lack of female role models	*	*			*		*
5. <b>Male Underachievement</b>	*	*	*				*
a. over-representation of male underachievers <sup>6</sup>	*		*		*	*	*
b. attribution and motivation	*	*					*

<sup>4</sup> self perpetuating cycle?

<sup>5</sup> to what degree do peers influence achievement?

<sup>6</sup> is lack of male role models in primary school related to male underachievement?

Variables	Target Group			Kin Variable		Evidence Source	
	Gifted Under-achievers	Gifted	Under-achievers	Age Variable	Gender Variable	Clinical/ Observation	Re-search

### SCHOOL-BASED FACTORS

#### 1. Attitudes to School

a. underachievers generally negative attitude	*	*					*
b. decline in attitude of gifted toward school <sup>7</sup>		*					*
c. private vs. public schools	*						*
d. size of school/ community <sup>8</sup>	*	*					*
e. school priorities/ academic vs. social and athletic	*	*				*	*
f. negative attitudes toward gifted <sup>9</sup>	*	*					*
g. pressure to be creative and non-conformist	*					*	
h. cooperation vs. competition <sup>10</sup>	*			*	*		*

#### 2. Teacher Attitudes/ Expectations

a. negative attitudes to gifted		*					*
b. expectations of gifted <sup>11</sup>	*	*					*

#### 3. Teacher Personality

a. caring and concerned	*	*				*	*
b. firm/in control	*	*				*	*

<sup>7</sup> is it the same for gifted underachievers and gifted achievers? Why?

<sup>8</sup> smaller is better - why?

<sup>9</sup> why would it affect some and not others?

<sup>10</sup> does it vary with age/sex?

<sup>11</sup> how is it related to attribution?

Variables	Target Group			Kin Variable		Evidence Source	
	Gifted Under-achievers	Gifted	Under-achievers	Age Variable	Gender Variable	Clinical/ Observation	Re-search
c. flexible/collegial/egalitarian	*	*				*	*
d. academic competence		*					*
e. communication skills		*					*
f. energy/enthusiasm		*					*
<b>4. Curriculum and Methodology</b>							
a. inappropriate curriculum a factor in gifted underachievement	*	*				*	*
b. use of a range of resources		*					*
c. optimal level of challenge	*	*					*
d. fun <sup>12</sup>	*	*					*
e. student input/control of learning <sup>13</sup>	*	*					*
f. in-depth exploration of ideas		*				*	*
g. drill vs. creative application	*					*	
h. relevance	*						*
<b>5. Feedback and Reinforcement</b>	*			*	*	*	*
a. intrinsic vs. extrinsic motivation	*						*
b. competition/cooperation	*					*	
<b>6. Learning Styles</b>							
a. convergent vs. divergent <sup>14</sup>	*	*	*				*

<sup>12</sup> how does it relate to underachievement?

<sup>13</sup> how is it related to locus of control?

<sup>14</sup> are there gender differences? what is the relationship to teaching styles? to subject preferences?

Variables	Target Group			Kin Variable		Evidence Source	
	Gifted Under-achievers	Gifted	Under-achievers	Age Variable	Gender Variable	Clinical/ Observation	Re-search
b. modality <sup>15,16</sup>	*	*	*	*			*
c. independent study <sup>17</sup>	*	*					*
d. grouping <sup>18</sup>		*					*
<b>7. Subject Preferences</b>							
a. career paths	*	*					*
b. mathematical ability <sup>19</sup>	*	*			*		*
c. subject preferences <sup>20</sup>	*			*	*		*
<b>8. Extracurricular Activities</b>							
a. bolster self worth	*					*	*
b. identify strengths/abilities	*						
c. more indicative of latter achievement than school <sup>21</sup>	*	*				*	*
d. underachievement evident both in and out of school	*	*				*	*

#### FAMILY VARIABLES

##### 1. Demographic/Socio-economic Variables

a. degree of stability conflict in home	*						*
b. poverty	*						*
c. family size	*	*				*	*
d. education level of parents	*	*				*	*

<sup>15</sup> is there a relationship to teaching styles? to subject preferences? are there gender differences?

<sup>16</sup> is there a biological component to underachievement/auditory deficits?

<sup>17</sup> mixed results - research needed

<sup>18</sup> impact on underachievement

<sup>19</sup> relate to convergent/divergent learning styles

<sup>20</sup> relate to learning styles

<sup>21</sup> is it true? - research needed

Variables	Target Group			Kin Variable		Evidence Source	
	Gifted Under-achievers	Gifted	Under-achievers	Age Variable	Gender Variable	Clinical/ Observation	Re-search
e. single parent families	*	*					*
f. role of the father	*	*			*		*
<b>2. Involvement/ Expectations</b>							
a. parental expectations	*	*		*		*	*
b. consistency <sup>22</sup>	*					*	
c. authority/power <sup>23</sup>	*			*		*	
d. involvement and control	*	*				*	*
<b>3. Reinforcement and Encouragement</b>							
a. postive attitudes	*					*	*
b. affection vs. rejection	*					*	*
c. appropriate reinforcement <sup>24</sup>	*					*	
<b>4. Modelling<sup>25</sup></b>	*					*	*

<sup>22</sup> research needed

<sup>23</sup> research needed

<sup>24</sup> research needed

<sup>25</sup> research needed

## Summary

In spite of the numerous research initiatives that have been undertaken in the last two decades, there are still key gaps that exist in the literature within each of the five main areas of investigation. In addition, even though research and clinical study

have identified a number of variables relevant to underachievement in high ability children, more work is needed to integrate these findings and examine the relationships between and among them. Finally, while research on intervention programs do exist, and are by nature longitudinal, little is known about the changes in underachievement over time, and about the relationship of these changes to variables associated with underachievement. Longitudinal and cross-sectional studies are needed to provide age- and/or stage-related information about underachievement in gifted students.

Given the number and range of concerns that emanate from a review of the literature, it was felt that a comprehensive cross-sectional comparison of gifted underachievers and achievers by gender would serve a useful function. While the nature and complexity of the undertaking was not conducive to an experimental design, a questionnaire/interview format allowed for a qualitative analysis of the variables identified as relevant to gifted underachievement. Specifically, this analysis:

- a) provides developmental information on underachieving gifted students grades 4 to 12.
- b) serves to substantiate or corroborate both experimental claims and clinical observations in the major areas of investigation.
- c) examines the relationships between a wide range of variables associated with underachievement in gifted students.
- d) provides a comparison between gifted underachievers and their achieving counterparts.
- e) helps develop a profile of gifted underachievers to aid in identification.
- f) provides a framework for further research.

## **CHAPTER III**

### **METHODOLOGY**

#### **Background**

This study represents the completion of the final stage of a three-part study of underachieving or "hidden gifted" students. The purpose of the first two stages of the research was to determine the prevalence of "hidden gifted" students within a Western Canadian School Division, to investigate the unique educational, social, and emotional profiles of the students, and to make comparisons among three grade-defined subgroups of underachieving students (Lupart & Pyryt, 1996).

There were a total of 19 Calgary Catholic Board of Education schools participating in stages 1 and 2 of the study, 17 of which offered gifted or Ed Plus programs. Ed Plus schools offer pull-out types of programs where identified gifted students within the school may be provided with extension, enrichment, and the opportunity to interact with their intellectual peers for a limited time each week. The amount of time a student spends in these classes, the focus of the program, and the activities offered vary somewhat from school to school. They may include classes in higher order and creative thinking, opportunities for in-depth independent study, or structured seminars and discussions. There were eight elementary schools, nine elementary/junior high schools, and two senior high schools in this sample.

In stage 1 data collection was carried out on all grade 4, 7, and 10 students within these 19 schools using existing information from a group administered intelligence test (Canadian Cognitive Abilities Test) and subject achievement levels as indicated by the most recent report card. From an initial pool of 2,231 students whose measured intellectual potential was 120 or higher on one or more of the subtests of the

Canadian Cognitive Abilities Test, and who demonstrated a significant achievement-potential discrepancy, 80 students were identified as prospective participants for stage 2 of the research. Parent permission forms were sent home and the final sample consisted of 58 students, 37 males and 21 females. Each stage 2 participant was administered the Woodcock-Johnson Psychoeducational Battery-Revised (WJPB-R), the Piers-Harris Self-Concept Scale (PHSC), and Thinking About My Schools (TAMS), a measure of school climate.

Multivariate analysis of variance of the stage 2 data indicated that there was a significant interaction effect between Gender and School Level, and a significant Grade Level effect. The primary findings revealed that first, the achievement scores of the students on the WJPB-R were higher than their school grades would suggest. Second, lower grades among high potential students were attributed to motivational problems, and tended to worsen at the junior high level, especially for boys. Third, overall achievement declined as students progressed from grades 7 to 10.

### **Overview of Present Study**

The final phase of the hidden gifted study was designed and carried out in the spring and early summer of 1994. The purposes of the research were twofold. The first involved a follow up of the original group of underachieving students, to monitor any changes in their academic development, and to explore through a detailed questionnaire, a number of areas that previous research has indicated might be relevant to their academic achievement. The intent was to move beyond a static profile of factors related to gifted underachievement, by exploring relevant dimensions attributed to gifted underachievers at three grade levels in the educational system. The cross-sectional aspect of the study provided an opportunity to explore age-related patterns of



achievement across a broad spectrum from mid-elementary to the end of high school. Previous studies of gifted underachievers have tended to concentrate on a more restricted age range.

The second component of the present study involved a comparison between the original underachievers and a corresponding group of gifted achieving students at each grade level. The purpose of examining the differences between the two groups was to provide insight into what factors tend to distinguish gifted underachievers from their achieving peers, and what factors might be critical in the remediation or reversal of patterns of underachievement. Again, the cross sectional nature of the design allowed examination of the possibility that factors that seem relevant to underachievement might vary at different grade levels.

Finally, within each of the subgroups the responses of males and females were compared. A good deal of research has been carried out with regard to the unique issues facing gifted females (Kerr, 1985; Silverman, 1989; 1991), whereas relatively limited information is available concerning comparisons between gifted underachieving males and females. A final purpose of the present study was to determine if there are factors that tend to differentiate between gifted male and female achievers and underachievers, and at what ages these factors appear.

### **Subjects/Sample**

Of the 58 underachieving gifted students in the original study, a total of 48 from 17 schools, were tracked for subsequent investigation. These students had remained within the same school system and the same community of schools and feeder schools in virtually all cases, and some within the same school. The original group was comprised of 15 students at the grade 6 level, 20 at the grade 9 level, and 13 at the

grade 12 level. This pool of students was drawn from schools from all sectors of the city. The communities in which the schools are based vary widely in terms of socioeconomic and demographic variables and as such are probably reasonably representative of the diversity of schools and student populations within a mid-sized Western city. It must be noted, however, that Ed Plus schools are not distributed evenly throughout the city. There tends to be a somewhat higher concentration of these schools in more affluent, middle class areas.

The selection of a comparative sample of achieving gifted students was similarly drawn from students who were or had been in the Ed Plus program. This ensured that the underachieving and achieving groups both met the same criteria in terms of ability and had similar experiences in terms of enrichment opportunities. Efforts were made to select the comparison group of achieving students from the same school as the original underachievers but this was not possible in all cases at the elementary and junior high school level. In these instances students were drawn from Ed Plus schools in communities that were similar in terms of socioeconomic and demographic variables. The gifted achieving group was comprised of 24 grade 6 students, 13 grade 9 students, and 18 grade 12 students from a total of 16 schools. A breakdown of the students by gender and achievement level is provided in Table 2.

**Table 2**  
**Number of Students in Study x Grade, Gender and Achievement Level**

Grade Level	Underachieving Gifted Sample		Achieving Gifted Sample	
	Male	Female	Male	Female
Grade 6	8	7	8	16
Grade 9	16	4	6	7
Grade 12	8	5	8	10

### **Design/Procedure**

An interview/questionnaire design was utilized in this study. It allowed for the examination of a multitude of variables linked to achievement levels in gifted students and for an exploration of the relationships that might exist between these variables. Additionally, it was hoped that the range of information a questionnaire could provide would corroborate findings and suggestions of relevant variables already cited in both experimental and clinical work. Finally, the questionnaire format was thought to be the most useful means of developing an in-depth profile of the underachieving gifted students.

Permission to conduct the study was obtained from the School Board, and the principals and parents of the students involved were contacted. Letters were sent to the parents of both initial study participants and extended or achieving study participants. Written confirmation was required before the student could be included in the sample. All participants were ensured of confidentiality and anonymity in their responses.

The interview/questionnaire was administered individually to each of the 103 students individually in May and June of 1994 by a female graduate student in Educational Psychology. Interviews took place in the respective schools of each of the subjects during the school day.

The personal interview format allowed for greater flexibility and accuracy of response than would be found in standard questionnaires. The oral administration of the questions ensured both an understanding of the question as well as greater depth and adequacy of response. Subjects were able to seek clarification if they did not understand the question, and the interviewer was able to pursue incomplete or ambiguous responses. In addition, the oral format avoided penalizing students with poor reading or writing skills. Finally, it should be noted that in an interview type of

format, subjects are less likely to fail to respond to a question (Shaughnessy & Zechmeister, 1990), so data collected will tend to be more complete.

The use of an interview format also introduces the potential for interviewer bias. To guard against this possibility a number of precautions were taken. During the interview, students were asked the questions in a standardized fashion. The wording and order of questions were constant. Responses to the questions were, for the most part, open ended. Students were allowed to discuss or explain their answers in as much detail as they wished. If they did not appear to understand the question, the interviewer would provide assistance; if their response was unclear or ambiguous, the interviewer would occasionally seek clarification. Probes were used judiciously and care was taken not to give examples or provide information that might influence the subjects' subsequent responses. In all cases, attempts were made to make the students feel at ease, and the interviewer assumed, as much as possible however, a non-directive, unobtrusive role. All concerns relevant to the questionnaire format and administration, data collection and subsequent analysis were reviewed and discussed in two meetings between the interviewer and the researchers. Responses were taped and verbatim written transcripts were prepared from the recording to ensure faithful replication of responses. In addition to the taped responses, the interviewer made brief field notes during and after the interviews. Summaries of the notes were written up and appended to the end of the interview.

### *Instrument*

The questionnaire used was a modification of an interview form developed by Marquardt (1987) who compared gifted at risk students and gifted drop out students and gifted achievers. The questions in the original forms were formulated by an advisory

panel of experts from the Denver Metropolitan area. A validation study was subsequently conducted at a Denver area high school, and based on the results some minor changes were made.

The final Marquardt Interview Form D was composed of 48 questions and 56 elaborations in five main categories: Academic History; School Environment; Personal/Family; Leaving School; and Conclusions and Recommendations.

For the purposes of the present study, Marquardt's form was modified in the following ways:

- 1) Questions not relevant to the present study, particularly questions involving reasons for leaving school, were omitted.
- 2) Questions were rephrased and simplified to avoid misunderstanding and misinterpretation, particularly by younger students.
- 3) Questions that other previous research indicated might be relevant to underachievement in gifted students were added.
- 4) A clinical questionnaire developed by Rimm, Cornale, Manos and Behrend (1989) was used to supplement and extend the questionnaire.
- 5) Questions were reorganized and categorized to provide greater continuity and flow between questions and to aid in the analysis of the response.

Once the initial format of the questionnaire was designed, it was administered to a small pilot sample of achieving and underachieving gifted students. Based on their responses and teacher recommendations, minor changes were made before it was used on the larger study sample.

The final questionnaire was comprised of 93 questions and 31 elaborations, and took between 45 minutes and one hour to administer. It was designed to gather information on the five clusters or categories of information that previous research

indicated might have an impact on achievement: Personal/Family variables, Personal/Social variables, Personal/Academic variables, School Environment, and Teachers. A copy of the questionnaire is included in Appendix A.

The Personal/Family section was made up of 31 questions, covering information on the number, ages and sex of family members, their patterns of interaction, and the degree and types of influence they might have on the individual. The interview began with questions that required simple and straightforward answers such as asking the students to list their siblings and gradually progressed to questions about parental expectations and aspirations that required a more thoughtful and detailed response. The basic design of moving from simple to complex was repeated in each of the four subsequent areas.

The second category, Personal/Social variables, dealt with the number, nature and quality of relationships the individual had with other people, as well as questions about use of leisure time and recreational pursuits. While the primary focus was on peer relationships, there were, again, more open ended questions in which students could, and did, discuss perceptions of family members or teachers.

The Personal/Academic section was designed to provide information on both the students' academic history and their attitudes toward, and assessments of, a variety of aspects and components of their academic life. In this category 15 questions ranging from attendance in special programs and amount of homework done, to preferred learning styles and favorite subjects were posed.

The fourth category, School Environment, asked students to respond to a series of 24 questions about the school environment including their perceptions of, attitudes toward, and responses to, the policies, practices, and demands of the school. The final 15 questions dealt with the roles and attributes of the teaching staff, the students'

perception of the impact of the teachers upon them, and their conceptions of how, or if, teachers could make their education more pleasant and productive.

### **Data Reduction and Analysis**

When all interviews were completed, a random sample of the interview tapes and transcripts were reviewed to develop a sense of the range and complexity of the responses. The interview transcripts were then separated into categories based on grade, gender, and study group, and the more difficult task of data reduction to a form where they could be summarized and tabulated without losing information began. A number of questions involving listing, naming or rank ordering items were easily processed. Many other questions, however, had been deliberately designed to allow for a broader range of response, and to reduce instrument bias or preconceptions.

A standardized format for examining and reducing the interview information was developed and implemented consistently throughout this stage of the study (Shaughnessy & Zechmeister, 1990). For each section of interview questions the researcher randomly selected one third to one half of the samples at a particular grade level and read through their responses to all questions in that section. A summary list of descriptors or terms used in the responses was compiled. From this list the researcher attempted to place the responses into a number of categories (usually 5 to 6). For each general category created, a list of associated descriptors/terminology was kept. The researcher then went back and summarized the data, using the categories created, for all groups at that grade level and for that section of questions. The list of descriptors and terms subsumed by a particular classification helped ensure that categorization of responses was consistent. When a novel response was encountered,

an attempt was made to see if it could be included in one of the existing categories - if not a new category was created. This process was repeated for each remaining grade level and category of questions.

### *Transition Group*

The first item of interest became apparent even before the analysis of the interview responses. As previously mentioned, once the interviews were completed, they were counted, classified, and sorted according to grade level, gender and group. The information necessary to complete this task was contained in a brief summary of biographical data that appeared at the beginning of each interview. Included in this summary of basic subject information was a list of their current marks and achievement levels. It became apparent that a number of the original underachieving subjects seemed to have made dramatic gains and could, in fact, no longer be classified as underachieving. A decision was made at this point to divide the sample into three instead of the planned two categories; original underachievers whose status had not changed, original group members who were now achieving at high levels (a transitional group) and members of the extended study group of gifted achieving students.

This was an unexpected finding. A comparison of this cross-over group to both underachievers and achievers might further isolate factors critical to differentiating between underachievers and achievers, and might shed light on what factors seem to be associated with making the transition from underachievement to achievement.

The gains made by members of the original underachieving gifted group ranged across a continuum from those still receiving failing grades to those whose marks had risen dramatically to the high 80's and 90's. Consequently, cut off criteria to distinguish between those still underachieving and those who were not, needed to be



established. The problem this raised is central to the study of underachieving gifted. Definition and identification of underachievement is usually determined according to an ability/achievement discrepancy formula (Whitmore, 1980). If achievement is significantly lower than what one might expect from individuals with a given ability, they are said to be underachievers. While this seems reasonable at a conceptual level, as an operational definition it is seriously flawed. Traditional tests of intellectual ability, both individual and group, have been increasingly criticized for their bias and for their narrow definition and measurement of intelligence. Secondly, even though I.Q. scores are correlated with academic success, it is not clear what levels of achievement are reasonable to expect from any particular I.Q. range. As well, the use of teacher grades as indicators of achievement is problematic because of the individual variability in terms of standards and expectations that may exist between teachers. Finally, there is no clear consensus on just how much of a discrepancy between ability and achievement is significant. Our problems in this area were further complicated by the fact that we did not have access to the original scores and assessment that had been used to place the students in the Ed Plus program.

Despite these difficulties, a distinction had to be made. The criteria used were the standards required for attainment of a first class honours standing in most Calgary schools -- an overall average of 80% with no mark less than 70%. This was relatively easy to compute for high school and junior high subjects because marks at those levels were reported as percentages. Most elementary schools, however, used letter grades. In these instances a B was converted to a 70%, B+ 75%, A- 80%, A 85% and A+ 90%. It is acknowledged that this type of rounding and estimation does impose a ceiling on elementary mark equivalents. However, this did not appear to significantly affect the placement of students in categories.

A summary of the revised categories by grade and gender is presented in Table 3.

**Table 3**  
**Number of Students in Study x Grade, Gender and Revised Achievement Level**

Grade Level	Underachievers		Transition		Achievers	
	Male	Female	Male	Female	Male	Female
Grade 6	2	4	6	3	8	16
Grade 9	14	2	2	2	6	7
Grade 12	8	4	-	1	8	10
Total	24	10	8	6	24	33

### **Limitations**

The study was subject to a number of limitations.

#### ***Sample/Population***

The extent to which the results of the study may be generalized is affected by the sample and the population from which it was drawn.

- 1) The sample was chosen from students within the Calgary Catholic Board of Education. The students are by definition, choice, and to a degree, curriculum, different from either students within the Public system or private and charter schools. Religious and values education is a mandated component of their course of study, and serves, therefore, to differentiate between them and students in schools administered by different boards. The extent to which this

sample is representative of the larger population of gifted achievers and underachievers is not known.

- 2) The sample of students within the Calgary Catholic Board of Education was drawn from 17 Ed Plus schools that provide programs and services for gifted students. While these schools are located in a variety of communities throughout the city they tend to be somewhat more concentrated in more affluent middle class neighbourhoods.
- 3) Of the 58 students originally identified as underachievers only 48 took part in the longitudinal follow-up three years later. While subject loss is common in longitudinal studies (Shaughnessy & Zechmeister, 1990), it does introduce an element of potential bias in the sample.
- 4) A fourth problem was that of reactive measurement. For a variety of reasons, subjects may have reacted or responded differently than they normally would have simply because they were aware their responses were being observed and recorded (Shaughnessy & Zechmeister, 1990).

### ***Validity***

There is no reported validity and reliability information on the interview instrument.

The initial questionnaire used by Marquardt (1987) was comprised of questions formulated by an advisory panel of experts from the Denver Metropolitan area. In a validation study the questionnaire was administered to 50 high school students, self or interview identified as being of high ability (i.e., no test scores were used). Questions were subsequently revised or eliminated by Marquardt based on interviewer and subject feedback from the field test.

### *Conceptual Considerations*

- 1) There is a fundamental problem with the conceptualization of underachievement. Neither the tests used to assess potential ability, nor the criteria used to assess performance are perfect indicators - discrepancies between the two are inevitable. The error of measurement implicit in the definition of terms makes interpretation of results difficult (Thorndike, 1963). Differences between groups, or apparent changes in an individual's performance over time may be statistical artifact - not real change.
- 2) A second, related, limitation involves heterogeneity of criteria (Thorndike, 1963). The criteria used as a standard of achievement was an honor's standing - an average of 80% with no mark lower than 70%. It can be expected that what constitutes an 80% will vary between teachers, subject areas, and schools. The issue is even more problematic when attempting to compare grade levels that range from grade 6 to grade 12, and where philosophy and expectations with regard to achievement may vary considerably.
- 3) For grade 6 students estimates of achievement expressed as a percentage were derived from letter grade equivalents - a practice that may have imposed a ceiling on the scores of some grade 6 students.

## **CHAPTER IV**

### **RESULTS AND DISCUSSION**

#### **Introduction**

Analysis of the questionnaires yielded information that discriminates between gifted achievers and gifted underachievers in terms of their relationship with others, gender variables, school-based variables and family variables. The general themes or trends that emerged in each of these categories are discussed and data from select questions is presented in tables to support and substantiate claims made.

#### **Transition Group**

As mentioned previously, preliminary grouping and analysis of the questionnaires revealed the existence of a transition group - gifted underachievers who had reversed their patterns of underachievement in the 2 1/2 year interval between the second and third stages of the study. Although the number of students in this group constitute an admittedly small sample (14 students), a number of observations arise from an examination of the grade level, gender, and distribution of these transition students.

- a) The first observation to be made is that underachievement, particularly at lower grade levels, seems to be subject to a good deal of fluctuation. While this would seem to hold out some hope for bright children that are underachieving, it also underscores the danger of applying labels to children, particularly when an assumption that the label refers to a fixed or static quality may be made.

- b) There are proportionately more boys than girls that have made the transition to the achievement category at the grade 6 level. It is possible that this may be due to maturational factors or a developmental lag. The boys may have matured to the point where they are better able to meet the demands of a structured educational environment. It is interesting to note that in the group of underachievers that remain at the grade 6 level the girls outnumber the boys by a ratio of 2:1. At all other grade levels the pattern is reversed.
- c) The number of students who make the transition from underachiever to achiever declines steadily as one progresses through the grades. This may suggest that underachievement is most fluid at the elementary level and becomes progressively more entrenched with increased duration. If this is indeed true, then intervention approaches to reverse patterns of underachievement might be implemented most profitably at an early age. Underachievement in later grades seems more resistant to change.
- d) The ratio of boys to girls in the transition category declines as one goes through the grades even though there are greater numbers of boys in the underachieving category to draw from. For example, by grade 9 only 2 boys out of 16 have made the transition compared to 2 girls out of a possible 4. This might suggest that either there are different factors responsible for underachievement at different grade levels or that girls are better able to adapt to academic demands.

### **Relationships with Others**

Research indicates that the interpersonal relationships of gifted underachievers tend to be troubled. They are described as possessing poor social skills, being less well accepted than their achieving peers, and more vulnerable to peer pressure. In relation

to adults they are described as rebellious and resistant to authority. Eighteen questions in the second section of the interview explored social concerns, interpersonal relationships and extra-curricular interests and activities. Several questions tended to distinguish between gifted underachievers and their achieving peers. Results tend to corroborate existing information and to suggest areas where further research is needed.

### *Importance of Peers*

Possibly the most telling piece of information on the significance of peers came in response to a question in another part of the survey. Question 4.2 asked students what they liked best about school. Responses were placed in one of five categories: Academic Classes; Non-academic Classes; Sports and Extracurricular Activities; Teachers; and Peers. The results are listed in Table 4.

**Table 4**  
**Student Assessments of the Best Part of School x Grade and Achievement Level**

Grade	Underachievers					Transition					Achievers				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Grade 6	2	2	3	-	-	3	1	4	1	1	6	2	7	1	12
Grade 9	2	3	5	1	3	3	-	-	-	1	2	3	3	2	7
Grade 12	-	1	1	2	5	-	-	-	-	1	2	2	5	-	9

- 1 Academic classes
- 2 Non-academic classes
- 3 Sports/Extracurricular activities
- 4 Teachers
- 5 Friends/Peers

By grade 12 peers constitute the single largest response category for all groups, accounting for at least 50% of all responses. The implications these results have for the structure of academic classes, teachers, and further education will be discussed in subsequent sections. For the present discussion, it is important to note that peers seem to play a large and crucial role in a student's enjoyment of school. This seems to be particularly so for achievers and for students in grade 12. It seems odd that the achievers would place the higher emphasis on peers. Given their level of success in school, it was thought that academic classes and teachers would play a far more influential role. It may be that, as the literature suggests, underachievers experience more difficulty in forming and maintaining peer relationships and that this difficulty colors their enjoyment of, and attitude toward, their education. It seems peer relationships have a significant impact on attitudes to school. Research has tended to concentrate on the role of family and the teacher in underachievement; the role peers play needs to be investigated in greater depth.

All groups tended to have about the same mean number of friends (Question 2.4). Their friends tended to be described in positive terms (Question 2.6) and met with the approval of their parents (Question 2.5). Group differences were apparent with regard to what they did with their friends and in their spare time, and the amount of conflict they experienced with peers and teachers. A more detailed examination of these differences is presented in the following section.

### *Interests and Activities*

The first question in this section of the survey asked students if they had any specific interests or hobbies/activities they enjoyed outside of school. Research had indicated that underachievers tend to be less active and less engaged in activities



(Callahan et al., 1994; Colangelo et al., 1993), and have difficulty with peer relationships. Responses to the survey question were placed in one of five categories depending upon the level of engagement or passivity involved, and whether or not it was an individual or group activity. The first category, solitary-passive, involved interests or activities that were done alone, and required little active engagement. The most frequent responses listed in this category were watching television or listening to music. Solitary-creative interests such as writing, drawing or playing a musical instrument, that were individual pursuits but required more active engagement were placed in category two. Group-creative pursuits such as band or debate that required both engagement and a degree of interpersonal interaction were placed in category three. The fourth and fifth categories were for individual and group athletic activities respectively. Swimming and snowboarding, if not part of an organized team, would be examples of the former category; soccer, hockey, baseball or any sport that involved an element of team work were placed in the last category. Students were allowed to make more than one response. Results are listed in Table 5.

**Table 5**  
**Student Interests / Leisure Activities x Grade and Achievement Level**

Grade	Underachievers					Transition					Achievers				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Grade 6	1	3	1	3	3	6	3	-	2	8	7	16	6	10	13
Grade 9	8	5	4	4	7	3	3	1	3	2	3	10	5	6	6
Grade 12	6	6	2	3	6	-	1	-	1	-	8	13	7	7	7

- 1 Solitary/Passive
- 2 Passive/Creative
- 3 Individual Sports
- 4 Group/Creative
- 5 Group Sports



Responses indicate that underachievers tend to watch more television than achievers at all grade levels. Again, the most dramatic difference occurs at the grade 9 level. While the mean number of hours of television watched drops in each category, underachievers in this survey are watching twice as much television as their achieving peers in grade 9. Again, during a period of growth that seems crucial in developing peer relationships, achievers seem to move to activities that will enable and foster this development whereas with underachievers the opposite seems true.

For all groups the number of hours spent either playing video games or working on the computer was low, and differences between groups negligible. Given the current educational thrust toward greater technology and computer use this result was somewhat surprising. It was anticipated that achieving students would use computers more, both at school and at home, to enhance their learning and their grades. The small difference that did exist indicated marginally greater use by underachievers. A more in depth analysis of responses by achievers indicated computers were used almost exclusively as word processors to improve the mechanics and presentation aspects of their assignments. They did not seem to be used to any appreciable degree for either research or problem solving.

### *Interpersonal Conflict*

The indication of problems with interpersonal relationships among gifted underachievers that is suggested by the withdrawal from active, social pursuits and the focus on solitary passive activities is reinforced by subject responses to Questions 2.15a and b, in which they were asked if they experienced conflict with peers and teachers. Responses were placed in one of three categories: 1) No - Rarely; 2) Occasionally - Sometimes; and 3) Yes - Frequently. Responses to questions dealing with conflict

with peers and teachers are listed in Tables 7 and 8. The highest reported frequency of conflict with peers occurs at the grade 9 level for both achievers and underachievers. It is also at grade 9 that one finds the greatest difference between achievers and underachievers. Over 46% of underachievers report frequent conflict with peers, with achievers slightly more than 23% report similar conflict. By grade 12 the frequency of conflict has decreased for all groups and the frequencies reported in each category are remarkably similar for both underachievers and achievers. While peer relationships are problematic for many young adolescents it would seem to be particularly so for underachievers. Given the importance adolescents ascribe to peer relationships, the relatively high frequency of conflict they experience could influence attitudes toward, and behavior in, the school setting. Interpersonal conflict may contribute to and help sustain patterns of underachievement at the grade 9 level.

**Table 7**  
**Frequency of Conflict with Peers x Grade and Achievement Level**

Grade	Underachievers			Transition			Achievers		
	3	2	1	3	2	1	3	2	1
Gr. 6	1	2	3	3	5	1	2	13	9
Gr. 9	7	5	3	3		1	3	6	4
Gr. 12	3	4	5			1	4	6	8

- 1 No/Rarely
- 2 Occasionally
- 3 Yes/Frequently

**Table 8**  
**Frequency of Conflict with Teachers x Grade and Achievement Level**

Grade	Underachievers			Transition			Achievers		
	3	2	1	3	2	1	3	2	1
Gr. 6		1	5	2	2	5		1	23
Gr. 9	6	2	8			4		2	11
Gr. 12	1	4	7			1	2	2	14

- 1 No/Rarely  
 2 Occasionally  
 3 Yes/Frequently

It is possible that other factors that may contribute to underachievement, such as auditory processing problems (Silverman, 1989), might similarly have an effect on peer relationships. Difficulties processing aural information would not only affect learning in school, but could also presumably act as an impediment to communication with peers. If this is the case, both peer conflict and underachievement could be caused by another factor. Therefore, while frequency of peer conflict does seem to be related to underachievement, particularly at the grade 9 level, the nature of the relationship is not known.

The pattern of responses involving frequency of conflict with teachers also tend to indicate that grade 9 is problematic for underachievers. Among achievers the incidence of conflict with teachers is generally low. The lowest frequency of conflict is reported in grade 6 with a gradual increase noted at each of the next two levels. Among underachievers the incidence of conflict is higher at all grade levels. The lowest is again grade 6, but the greatest frequency of conflict reported occurs at the grade 9 level. Over one third of the respondents reported frequent conflict with teachers - among achievers at grade 9 there were none. This finding is consistent with

the research that indicates that underachievers tend to be rebellious and experience difficulties with authority. While conflict with teachers will obviously have an impact on achievement, it is not clear if it is a cause or an effect.

### *Summary*

Junior high school may be a critical period in development of underachievement. In this study only one student made the transition to achievement status after grade 9. Marked differences in types of activities engaged in, and amount of interpersonal conflict with both teachers and peers have been noted at the grade 9 level.

Whether peer relationships are a causal agent or merely a reflection of other general factors is unknown, but the role peers and social relationships play in underachievement, particularly during adolescence, is a topic worthy of further research.

### **Gender Differences**

In this study the gifted females seem to enjoy, in many respects, advantages over males with regard to academic achievement. Males were increasingly over represented in the underachieving category (a statistic echoed throughout the literature) and while the numbers are a bit more balanced in the achieving category, females still enjoy a slight numerical advantage (refer to Table 3). Their marks are slightly higher (Question 4.6) and they receive a significantly higher proportion of academic awards, particularly in the achieving group. Gender differences with respect to academic awards are listed in Table 9.

Table 9

**Number of Academic Awards Received x Grade, Gender and Achievement Level**

Grade	Underachievers		Transition		Achievers	
	Male	Female	Male	Female	Male	Female
Grade 6	1	3	2	2	4	9
Grade 9	3	1	2	2	6	7
Grade 12	2	1	-	1	4	10
Total	6	5	4	5	14	26

As well, female learning styles choices seem to indicate a greater diversity and balance, and their subject area preferences, while similar in rank order to those of males, again seem to indicate greater degree of balance and diversity. In addition, they seem to be better behaved in the classroom and better able to consistently meet the expectations of teachers (Question 3.13) and, probably as a consequence of this, experience much less conflict with teachers and administrators (Question 5.13). In terms of these variables and indicators, females would seem to be well positioned to continue their academic success relative to males.

While it is possible that their relative decline at post-secondary levels is due to factors that emerge only at this time, this study was interested in exploring areas where a possible decline, or difference relative to boys might occur at an earlier age. Several such areas have been identified in this study.

### ***Leadership Awards***

One area where a dramatic change from grade 6 to grade 12 was noted involved awards received for leadership. The results are shown in Table 10. At the grade 6

level the number of females receiving awards in this area exceed the males by a ratio of 14:2. Eleven of these 14 awards were received by females in the achieving group. Males in the achieving group in grade 6 received none. By grades 9 and 12 the overall number of students receiving leadership awards has dropped, and perhaps more significantly, the relative proportions have changed. In grades 9 and 12 combined, the males received 8 awards, the females 2.

**Table 10**  
**Number of Leadership Awards Received x Grade, Gender and Achievement Level**

Grade	Underachievers		Transition		Achievers	
	Male	Female	Male	Female	Male	Female
Grade 6	1	2	1	1	-	11
Grade 9	3	-	-	-	2	-
Grade 12	-	-	-	-	3	2
Total	4	2	1	1	6	14

### ***Interests, Interaction and Problem Solving***

Differences between males and females were also noted with regard to preferences regarding interests, interaction patterns and approaches to problem solving.

Question (2.1) asked students to describe hobbies or interests pursued in their spare time. The range of answers given were categorized according to the degree of activity, engagement and interpersonal interaction involved. Again, the first category was comprised of activities such as watching television, listening to music or playing video games - essentially passive pursuits involving little or no interaction. The second category was made up of activities that tended to be of a solitary nature, but involved



an element of creative or active engagement. Activities in this category involved such things as drawing, writing poetry, or computer programming. The third category was for group activities that involved active and creative pursuits. Concert bands, debating clubs, and choirs were examples of activities in this category. The fourth and fifth categories were individual sports and group sports respectively. The number of males and females at each grade level who cited passive-solitary pursuits is listed in Table 11.

**Table 11**

**Number of Students with Solitary/Passive Interests x Grade, Gender and Achievement Level**

Grade	Underachievers		Transition		Achievers	
	Male	Female	Male	Female	Male	Female
Grade 6	-	1	5	1	6	3
Grade 9	8	1	2	1	2	1
Grade 12	5	1	-	1	3	5
Total	13	3	7	3	11	9

The number of boys in the passive low interaction group, although higher at each grade level, tends to decrease while the proportion of girls in this category increases by grade 12. Given that males are increasingly over-represented in the underachieving group and that it is the underachieving group which research would predict to be most likely to exhibit passive or solitary behaviors the increase of female responses in this category is puzzling. It may have ramifications for the decline in female achievement reported at post secondary levels.

Similarly, Question 2.6b asked students what they liked to do in their spare time with their friends, and again responses were categorized according to degree of activity and interpersonal interaction. (Refer to Table 12.) The passive/low interaction

category included activities such as watching television together, going to the movies and playing video games. The relative numbers of responses in this category again indicate a relatively higher proportion of females to males in grade 12. In this study, females are increasingly overrepresented in the passive low interaction categories as they progress through school.

**Table 12**  
**Number of Students with Passive/Low Activity Interaction Patterns x Grade, Gender and Achievement Level**

Grade	Underachievers		Transition		Achievers	
	Male	Female	Male	Female	Male	Female
Grade 6	-	1	5	1	2	5
Grade 9	6	2	2	-	2	1
Grade 12	3	4	-	-	3	9
Total	9	7	7	1	7	15

A final example of this tendency can be seen in the responses to Question 2.14 in which students were asked what they did when things went wrong. (Refer to Table 13.) The categories of responses ranged from passive, non-productive, or counterproductive reactions such as avoidance, procrastination and anger up to potentially more active and constructive responses to a problem such as seeking help, trying again, or solving the problem. The underachieving group generally have a higher proportion of responses in the passive or non-productive category, and females generally have a higher proportion than males. This tendency toward passive or non-productive responses on the part of the females seems to increase as they go through school, whereas for the males a decrease is noted.

**Table 13**  
**Number of Students with Passive Methods of Coping with Problems x Grade, Gender and Achievement Level**

Grade	Underachievers		Transition		Achievers	
	Male	Female	Male	Female	Male	Female
Grade 6	-	2	1	1	4	3
Grade 9	5	1	-	-	2	3
Grade 12	3	3	-	-	-	4
Total	8	6	1	1	6	10

### *Summary*

To summarize, there are indications that as females, particularly high achieving females, progress through school, they become increasingly more passive and less self-directive. This is reflected in a wide variety of areas ranging from school awards to interaction patterns, and problem solving approaches. What factors might account for this pattern, and whether or not it has a significant bearing on the gradual decrease in females' academic achievement remains at this point speculation. Research on the development of active and passive attitudes, the relationship to gender, and the degree to which it contributes to achievement in school and subsequent careers is needed.

### **School-Based Variables**

In the third, fourth and fifth sections of the questionnaire students were asked a variety of school- and classroom-related questions that research had indicated might be relevant to achievement. Students were asked about their academic history. They were asked to assess their own levels of ability and responsibility in regard to achievement,

and to comment on factors that might improve their performance. In general, the responses of the students were notable more for their similarity than their differences, but there were a number of factors that seemed to discriminate between the groups.

### *Student Perceptions of Ability*

Students were asked to rate their abilities and talents in seven different areas ranging from creativity to physical ability on a five point scale. The descriptors associated with each of the ratings were as follows: 1) Poor; 2) Fair; 3) Average; 4) Above Average/Very Good; and 5) Outstanding/Superior. The mean scores for each group in each category are listed in Table 14.

**Table 14**

**Mean Ratings of Student Assessments of Abilities and Talents x Grade and Achievement Level**

<b>Attributes/ Abilities</b>	<b>Grade Level</b>	<b>Underachievers</b>	<b>Transition</b>	<b>Achievers</b>
Attitude	Grade 6	3.50	3.56	3.72
	Grade 9	2.69	3.50	3.77
	Grade 12	3.25	3.00	3.65
Creativity	Grade 6	4.17	3.44	3.96
	Grade 9	2.94	4.25	3.46
	Grade 12	3.92	4.00	3.89
Physical Ability	Grade 6	3.83	3.20	2.92
	Grade 9	3.50	3.50	3.31
	Grade 12	3.75	2.00	3.29
Performing Arts	Grade 6	4.00	3.89	3.60
	Grade 9	2.53	4.25	4.00
	Grade 12	3.08	4.00	3.22
Academic Achievement	Grade 6	4.00	4.44	4.20
	Grade 9	2.81	4.25	4.69
	Grade 12	3.25	4.00	4.18
Leadership	Grade 6	3.67	3.78	3.50
	Grade 9	3.31	3.25	3.92
	Grade 12	3.42	2.00	2.94
Intelligence	Grade 6	3.83	4.22	4.00
	Grade 9	3.67	4.25	4.38
	Grade 12	3.92	4.00	3.83

There were only minor differences observed between grades and between categories. At the grade 6 level the responses of students in each of the categories are very similar and there are no real differences between the groups.

The most marked change occurs at the grade 9 level. Underachieving students in junior high tended to rate themselves lower than the achievers in terms of their creativity, performing arts abilities, academic achievement, and general attitude toward school. There did not appear to be a difference with regard to physical ability, leadership ability or intelligence. By grade 12 the assessments of underachievers have rebounded somewhat and the only difference is in the area of academic achievement. The differences in ratings in select categories for grade 9 students seem to suggest that the self-esteem of underachievers is particularly low at this grade level.

### *Learning Styles*

Research has indicated that students' learning styles or preferences, and the extent to which they can be accommodated in the classroom will influence both the students' enjoyment of, and achievement in that class (Redding, 1989). Responses to a number of questions in sections three and four of the questionnaire tend to support these claims. As well, there were differences observed between achievers and underachievers with respect to these variables.

Question 3.9 asked students to name or describe the manner in which they preferred to learn. Their responses fell into five categories: Independent Work; Hands On/Kinesthetic; Reading and Note Taking; Lectures/Listening; and Group Work. Students were allowed to give more than one response so the number of responses in any given cell may not correspond to the number of subjects in that cell. The results are summarized in Table 15.

Table 15

**Student Assessments of Learning Preferences x Grade, Gender and Achievement Level**

	Underachievers					Transition					Achievers				
	Ind	HoK	VRN	LeL	GpW	Ind	HoK	VRN	LeL	GpW	Ind	HoK	VRN	LeL	GpW
Grade 6															
males	1	0	0	0	1	3	3	0	0	3	3	2	0	2	3
females	2	3	0	0	2	0	1	0	0	2	6	3	1	2	7
Grade 9															
males	7	5	1	2	5	2	0	0	0	0	5	1	0	1	3
females	0	3	0	0	1	2	2	0	0	0	6	4	3	2	1
Grade 12															
males	2	5	1	1	2	0	0	0	0	0	6	0	0	2	1
females	2	2	1	1	1	1	1	0	0	0	6	2	2	5	6
Total															
males	10	10	2	3	8	5	3	0	0	3	14	3	0	5	7
females	4	8	1	1	4	3	4	0	0	2	18	9	6	9	14
Ind	Independent														
HoK	Hands-on/Kinesthetic														
VRN	Visual/Reading/Notes														
LeL	Lecture/Listening														
GpW	Group Work														

The first point to be considered is the number of responses in the Hands-on/Kinesthetic category. It was the most popular overall mode of learning for the original group of underachievers, the second most popular for the transition group, and for the achievers, it ranked only fourth. It should also be noted that in the underachievers the proportion of students indicating a hands on/kinesthetic style

remained relatively constant. With the achieving group the proportion of students indicating a hands on/kinesthetic style started out lower and decreased as grade level increased. The differences in both the overall ranking and the direction of change may be significant. Students with a hands on/kinesthetic style may be at a disadvantage in school, particularly in the later grades. In elementary it is possible that there are more opportunities for students to engage in this type of learning experience. Hands-on experiences are also available at the junior high and high school, but would tend to be concentrated in the option blocks, the sciences with a lab component, and possibly math, if computers were used. While hands-on experiences could ostensibly be integrated into any subject area, junior and senior high academic courses with an emphasis on more abstract conceptualization and possibly a greater emphasis on content knowledge might emphasize these types of learning experiences to a lesser degree. If this is the case, it may work to the detriment of many gifted students. One might expect that they would be less motivated in general or would gravitate to subjects where these kinds of learning opportunities are offered.

As well, in all categories there was a higher overall proportion of girls with a kinesthetic learning style preference. Again, it tended to be most pronounced in the underachieving group and gradually decreased through the transition and achieving groups.

The learning preferences of gifted achieving females tended to broaden as they progressed through school. Males, and females in the underachieving and transition group tended to have a more restricted range of preferences. The greater versatility of achieving females, as a group, would seem to give them an advantage; they would be better able to adapt to a variety of learning situations. The relatively restricted range of males suggests they might experience more problems as a group with motivation or

achievement in situations where their preferred learning styles are not being accommodated.

The last major point of note is that for all categories reading and listening are, respectively, the two least preferred modes of learning. This is particularly true for males. Only two males in the underachieving group and none in either the transition or the achieving group chose reading as a preferred method of learning. The responses of the males in the listening category are only minimally higher. The girls show a somewhat different pattern. Although, like the boys, none in the transition group chose either reading or listening, in the achieving group six girls chose reading and nine chose listening.

Given that Reading and Lectures/Listening are probably the dominant forms of instruction at secondary and post-secondary institutions, this data is particularly troublesome. First, it is curious that the group that would seem to be in the best position to take advantage of dominant learning styles at the secondary and post secondary levels (gifted achieving girls) is the same group in which a decline in achievement is noted at the post secondary level. While learning styles may be important, there seem to be other overriding factors influencing achievement. Secondly, we do not seem to be teaching the way many of our gifted children want to learn and this may be having an impact on the subjects they enjoy, the ones they are successful at, and possibly the course of future studies they pursue. A number of questions in this section of the interview seem to support this claim.

### *Subject Preferences*

Subject preferences across categories suggests there may be a relationship between learning style and favorite classes. (Refer to Table 16.)



**Table 16**  
**Favorite Subjects x Grade, Gender and Achievement Level**

Subject	Grade	Underachievers		Transition		Achievers	
		Male	Female	Male	Female	Male	Female
Math	Grade 6	-	2	3	1	-	5
	Grade 9	4	-	1	1	-	1
	Grade 12	1	1	-	-	2	1
Science	Grade 6	-	-	-	-	1	1
	Grade 9	-	2	1	-	2	1
	Grade 12	3	-	-	1	2	4
Social Studies	Grade 6	-	-	-	-	-	1
	Grade 9	2	-	-	-	1	-
	Grade 12	2	-	-	-	-	-
Language Arts	Grade 6	-	-	-	1	1	2
	Grade 9	1	-	-	-	-	1
	Grade 12	-	-	-	-	-	2
Phys. Ed.	Grade 6	2	1	1	1	4	3
	Grade 9	3	-	-	-	-	1
	Grade 12	-	-	-	-	3	-
Option	Grade 6	-	1	2	-	2	4
	Grade 9	3	-	-	1	3	2
	Grade 12	2	3	-	-	1	3

Boys' choices of favorite subjects are concentrated in the mathematics, sciences, phys. ed., and option categories. The pattern for girls was different and relatively

constant across categories. Girls in all categories chose option as their favorite subject. Although mathematics was the second most popular subject among girls language arts and science were also rated highly.

The reasons for the students choices may be related, at least in part, to their learning style preferences. For example, the boys lack of enthusiasm for language arts and social studies, subjects having perhaps a greater reliance on reading and lecture methods of presentation would seem to reflect their preferred learning styles. By the same token, the relatively higher rating of reading and listening forms of learning by girls in the achieving category may partially explain the higher language arts choices. Math, science and options - subjects more consistent with a hands-on learning style are preferred by students in all categories, at all grade levels. These results might also suggest some support both for Redding's (1990) contention that achievers and underachievers differ in terms of their preference for either holistic/divergent or convergent learning experiences and findings that suggest that achievers tend to gravitate to health science and engineering professions, while underachievers are drawn to fine arts and social sciences (Colangelo et al., 1993). Only six students overall chose social studies as a favorite subject, and of those, four were underachieving males. While there is not enough evidence in this study to support a link between convergent/divergent learning styles, achievement levels and subject career choices the idea is interesting and worthy of further investigation. These findings are corroborated by student responses to a number of other questions in the interview. Students were asked to name the subject they liked least (Question 4.4) and to rank order all subjects in terms of preferences (Question 3.2). Their responses were consistent with the information presented above in all cases.

### ***Favorite and Least Favorite Subjects***

Questions 3.2a and 3.2b asked students to explain why they selected a particular subject as either their favorite or least favorite. Tabulations of responses to these questions are listed in Tables 17 and 18.

**Table 17**  
**Reasons for Liking a Subject x Grade and Achievement Level**

Grade	Underachievers					Transition					Achievers				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Grade 6	1	22	4	2	3	2	8	4	1	-	-	4	-	1	3
Grade 9	3	6	2	1	-	1	3	1	-	-	4	9	7	1	-
Grade 12	-	13	3	4	2	1	1	-	-	-	2	10	1	1	2

- 1 Like teacher
- 2 Subject is interesting, challenging, fun
- 3 Easy/Low demands
- 4 High achievement
- 5 Break from academic

**Table 18**  
**Reasons for Disliking a Subject x Grade and Achievement Level**

Grade	Underachievers					Transition					Achievers				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Grade 6	-	3	-	2	2	-	3	5	4	1	1	17	10	2	2
Grade 9	1	9	4	-	5	1	2	1	1	-	1	8	6	-	-
Grade 12	-	10	4	-	-	-	-	1	1	-	-	8	9	4	-

- 1 Do not like teacher
- 2 Subject is boring, no fun
- 3 Subject is difficult/demanding
- 4 Lower achievement
- 5 Writing is difficult

None of the students specifically mentioned learning styles as a factor in choosing a subject as their favorite. It is possible, however, that learning styles are implicit in all of the categories with the possible exception of teacher personality variables. The questionnaire did not specifically ask students to explain the degree to which learning styles influenced their liking of a subject. It would be a useful question to explore in subsequent studies.

The results do not indicate a great deal of difference between achievers and underachievers. For all groups at all levels it was the amount of challenge, interest, and fun that most influenced students' perceptions of their subjects. While this seems to support Middleton et al.'s (1992) contention that the amount of fun is an important factor in learning, it was thought that it would discriminate between achievers and underachievers. It may be that achievers and underachievers differ in terms of what they see as challenging and fun - possibly a reflection of their learning styles.

It is also possible that achievers are better able to persevere and do well in subjects even if they are lacking in challenge and interest. Achievers may receive a certain amount of reinforcement and satisfaction from other factors that underachievers do not that enables them to continue working even when interest and challenge are low. Redding's work (1989) indicates that grades and external reinforcement do not seem to motivate underachievers. The low number of responses in category 4 by the underachieving group would seem to support this claim. Achievers, however, rated achievement levels and grades as a more significant factor; by grade 12 in the achieving group it was listed as the second most frequent reason given for preferring a particular subject.

For both achievers and underachievers the primary source of dissatisfaction with a particular subject was boredom and lack of fun. Among underachievers the number of responses in this category increased steadily with grade level. Among achievers a

reverse trend is evident. The proportion of students citing boredom/lack of fun as a reason for disliking a course drops steadily from grade 6 to grade 12.

Although boredom/lack of fun is the single largest category of responses at all grade levels for achievers the relatively high number of responses citing difficult/demanding and lower achievement levels at the grade 12 level is noteworthy. Underachievers in grade 9 and 12 do not mention achievement levels as a factor in how much they dislike a particular subject. While it may be that they have by this time resigned themselves to lower achievement levels, it may again support the claim (Redding, 1989) that underachievers are not motivated by marks. Grades seem to be a far greater source of both positive and negative motivation for high achieving students.

### *Teacher Variables*

Research in the area of underachievement had indicated that teachers play a critical role in the development of gifted students (Emerick, 1989; 1992). The fifteen questions in this section were designed to test commonly held assumptions about the role of teachers, administrators and counsellors, as well as to extend and elaborate upon this knowledge base. While the results of the questionnaire tend to corroborate the research in a few central areas (e.g., qualities of teachers students feel are important) and did seem to discriminate between elementary and secondary level students there were not any questions that seemed to discriminate between underachiever, the transition group, and the achievers in the manner suggested by the research. The responses to questions among these groups were, for the most part, very similar, both in terms of the types of responses and the relative numbers of responses in each sub category. Where differences did exist, they were small, and not always in the direction that might have been predicted by the research.

### *Teacher Characteristics*

Question 5.10 asked students to describe the most important qualities of a good teacher. The responses were placed in two main categories: personal qualities and characteristics such as caring, concern, friendliness, and sense of humor, and instructional variables such as content knowledge or degree of challenge offered. As might be expected, there was a difference with regard to age level. Grade 6 students placed a greater emphasis upon personal characteristics than upon instructional variables. Among grade 9 and twelve students the responses were relatively evenly split among all groups. A tabulation of responses is listed in Table 19.

**Table 19**

**Student Ratings of the Most Important Characteristics of a Good Teacher x Grade and Achievement Level**

Grade	Underachievers		Transition		Achievers	
	I.V.	P.C.	I.V.	P.C.	I.V.	P.C.
Grade 6	2	5	7	12	12	32
Grade 9	15	16	5	3	13	12
Grade 12	9	11	1	1	19	19

I.V. Instructional Variables  
P.C. Personal Characteristics

Elementary students tended to report fewer teachers and spent most of their time with a central core subject teacher. The teachers, may therefore, play a relatively larger role in the students' development, and the relationship they form with the students may assume greater importance. As well, elementary schools generally have integrated curriculums, a more holistic, process approach to learning and tend to employ a greater variety of approaches in the presentation of content. Instructional

variables may not be as great a concern to students in elementary because they typically encounter a concept in a wide variety of learning contexts.

Students in secondary schools may see seven or eight teachers in the course of a day. Their relationship to any one of those teachers and the subsequent impact the teacher's personality may have may be less of a consideration due in part to the time factor. As well, it is possible that as the emphasis in relationships begins to shift more toward peers, the importance and strength of the student-teacher relationship diminishes.

Finally, secondary schools tend to be more content driven. The content knowledge is fragmented and the methodology associated with each subject typically becomes more limited. For these reasons it is possible that instructional variables assume greater importance than they would in elementary.

### *Instructional Variables*

Question 5.10 represented the students' idealized conceptions of teacher qualities and attributes. Several questions in the interview concerned the degree to which their teachers met these ideals. In general, the level of satisfaction seemed to decrease as students moved from elementary to secondary. As well, surprisingly, underachievers tended to be more satisfied than either the transition, or the achieving group.

The differences between groups was most apparent in their response to two questions. Question 5.8 asked students if their teachers attempted to make curriculum topics challenging and fun. Responses were placed in one of five categories across a continuum that ranged from always to never. A tabulation of results is listed in Table 20. Question 5.9 asked students whether or not they were satisfied with the teaching

styles in their school. Responses were placed in the same five categories as Question 5.8. The degree of satisfaction with teaching styles by each group is listed in Table 21.

**Table 20**

**Student Assessments of the Frequency of Teacher Attempts to Make the Curriculum Challenging and Fun**

Grade	Underachievers					Transition					Achievers				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Grade 6	-	-	-	-	6	1	-	-	1	4	-	-	7	2	15
Grade 9	2	-	4	4	5	-	-	3	-	1	2	-	4	3	4
Grade 12	2	-	3	1	5	-	1	-	-	-	2	1	5	5	4

- 1 Never
- 2 Seldom
- 3 Sometimes
- 4 Often
- 5 Always

**Table 21**

**Satisfaction with Teaching Styles x Grade and Achievement Level**

Grade	Underachievers					Transition					Achievers				
	5	4	3	2	1	5	4	3	2	1	5	4	3	2	1
Grade 6	6	-	-	-	-	3	2	4	-	-	17	4	1	-	2
Grade 9	11	2	2	-	1	2	1	-	-	1	5	3	2	-	3
Grade 12	5	3	3	-	1	-	1	-	-	-	6	5	4	1	2

- 5 Always
- 4 Often
- 3 Sometimes
- 2 Seldom
- 1 Never



The relatively greater degree of satisfaction with instructional variables at the elementary level may, again, be a reflection of the tendency within elementary schools to approach the curriculum in a more holistic, integrated fashion with the use of thematic units. Teaching concept knowledge in an integrated fashion using the perspectives and techniques of a variety of disciplines would allow a greater breadth of learning experience. Students with a particular learning preference or style would be less likely to be excluded. As well, given that the elementary students in this sample seem to place greater emphasis on the teacher's personality and be generally less concerned with instructional variables, it is possible that the higher degree of satisfaction reflects less concern with and consideration of instructional variables.

The relatively greater degree of dissatisfaction of achievers is difficult to explain. It was thought that underachievers, given their relatively low degree of success within the education system, would be the least satisfied with their instruction. It was the achieving group(s) at all grade levels however that were most critical.

Though the reasons are not clear, there are a number of hypotheses that can be postulated. First, the pace and level of challenge offered in most classrooms may be inappropriate for our most able students. If instruction is not individualized it will likely be geared to the average level of ability - a level our most capable students may find tedious and repetitious. While this is understandable at elementary and junior high, it was thought that high school, given the variety of streams and programs available, would be able to better accommodate the needs of our high achieving students.

It might also be that our more capable students are more cognizant of the ways in which they learn and are therefore more aware of situations when learning conditions are not optimal. Increased metacognitive awareness could also therefore, be in part responsible for increased dissatisfaction.

Finally, as was suggested earlier, it may be that the level of achievement attained in a class becomes an important element in the degree of satisfaction a high achieving student experiences in a class. The results, and the extent to which they meet their expectations, may be as important as the day-to-day processes that take place within the classroom. For underachievers, estimates of satisfaction may be based more on personal and instructional variables.

Regardless of the reasons for dissatisfaction, there is cause for concern. Responses to questions in this section of the interview seem to indicate that students become increasingly disenchanted with the education system as they progress through it. As well, among higher ability students at least, it seems that it is the most successful students who are the least happy with our teaching methodologies. The reasons for this need to be addressed and examined in greater detail. Schools at the advanced grade levels do not seem to be promoting the sorts of attitudes that would lead to a love of, or a desire for life long learning. This seems most pronounced among the very group we have the highest expectations for.

### *Personal Characteristics*

Students were also asked to rate their teachers' personal attributes relative to some of the ideal characteristics they had identified in their responses. While there were some differences between groups, they were generally less pronounced than differences found for instructional variables.

For example, Question 5.1 asked students whether they felt their administrators were supportive of them. Again, their responses were placed across a five point continuum ranging from Yes/Always to No/Never. The tabulations of the responses to this question are summarized in Table 22.

**Table 22**  
**Student Assessments of Frequency of Administrative Support**

Grade	Underachievers					Transition					Achievers				
	5	4	3	2	1	5	4	3	2	1	5	4	3	2	1
Grade 6	6	-	-	-	-	6	1	2	-	-	21	-	2	-	1
Grade 9	10	1	1	1	1	3	-	-	1	-	8	1	-	-	3
Grade 12	8	1	-	-	2	-	-	-	-	1	11	1	2	-	4

5 Yes/Always  
 4 Usually  
 3 Sometimes  
 2 Seldom  
 1 No/Never

In addition to these tabulated responses, at both the grade 9 and grade 12 level one student in both the underachieving and achieving category responded with "I don't know." While these responses could not be fitted into any of the five main categories, the fact that all four responses occur at the secondary level tends to support the impression of increasing dissatisfaction with educational personnel that is reflected elsewhere in the data.

Underachievers at each grade level rated their administrators as more supportive than either of the achieving groups. While the differences are admittedly small the direction of change is consistent across all three grade levels. It is possible that in our secondary schools proportionately more attention, effort and intervention is accorded to lower achieving students. Higher achieving students may be seen as relatively self sufficient and needing little or no attention. Whether or not the lesser degree of attention affects the achieving students' marks is not clear, but it is possible that it contributes to a degree of dissatisfaction on their part. A more pronounced difference

is evident if comparisons are made across grade levels. Elementary students tend to feel a greater degree of support from their administrators than students at the secondary level.

Examination of student responses provides some insight into possible reasons for this trend. At the high school level a number of subjects in the achieving group doubted that the principal even knew who they were. It may be that the size of the secondary schools contributes to a certain degree of alienation. Students do not have as much contact with educators who could have a significant impact on their education.

At the secondary level there was also a tendency to see administrators as being somewhat divorced from the enterprise of teaching and learning. In their explanations of responses to Question 5.1 some students described administrators as enforcers of rules or business managers rather than instructional leaders. Students' perception of the principal's role at the secondary level did not always seem to include the expectation that administrators should, or would, be supportive.

Finally, the lack of support by administrators felt by high school students, particularly high achievers may be related to the perceived importance accorded to academics in their school. Some respondents indicated that they felt the pursuits most valued in their school were athletic and social - academic accomplishments were secondary. Again, it is interesting to note that while perceived value placed on academics seems to be a factor in underachievement, it is a concern shared and expressed by achievers. The extent to which it affects their relative achievement is, again, unknown.

In general, student responses seem to indicate that at the elementary level there is a greater degree of personal contact and more positive interaction. Elementary principals seem to be perceived as playing a prominent role, whereas at the secondary level they seem more removed.

Question 5.5 was similar to 5.1. It asked students if their teachers demonstrated concern and respect for them - variables that both the research and these students indicated were important. The student responses are listed in Table 23. Differences between categories at each of the grade levels were negligible. Underachievers and achievers rated their teachers in a similar fashion. There was, however, a small difference between the responses of elementary and secondary students with elementary students again showing a higher degree of satisfaction with the caring and concern demonstrated by their teachers.

Table 23

Student Assessments of the Frequency of Teacher Concern and Respect

Grade	Underachievers					Transition					Achievers				
	5	4	3	2	1	5	4	3	2	1	5	4	3	2	1
Grade 6	5	-	1	-	-	9	-	-	-	-	17	2	4	-	1
Grade 9	10	2	4	-	-	3	1	-	-	-	9	1	1	1	1
Grade 12	8	1	2	1	-	1	-	-	-	-	12	3	3	-	-

5	Yes/Always
4	Usually
3	Sometimes
2	Seldom
1	No/Never

Question 4.18 asked students if they were content with the size of their school. The results are listed in Table 24. The differences between groups were small but there were interesting trends. Among achieving gifted students, satisfaction with school size is highest in grade six and decreases steadily as grade level increases. With underachieving gifted students the pattern is reversed. Given that schools are generally

smallest at the elementary level, increase in size at junior high and again, at high school, it seems that it is the underachievers who are most content with larger schools.

**Table 24**  
**Satisfaction with School Size**

Grade	Underachievers			Transition			Achievers		
	3	2	1	3	2	1	3	2	1
Gr. 6	4	-	2	8	-	1	21	2	1
Gr. 9	12	3	1	1	3	-	9	2	2
Gr. 12	10	1	1	1	-	-	12	2	4

3     Yes  
2     Somewhat/Partially  
1     No

This finding is, again puzzling in light of research that indicates larger school size is related to underachievement. If there are factors operating in a large school that contribute to underachievement, underachievers do not seem to be inordinately concerned about them. The indications that achievers are less happy with school size is interesting. It may be that they are more aware of the negative impacts of large schools, though the impact it may have on their achievement levels is undetermined.

### ***Summary***

If the teachers' role is as important as the literature would suggest, this study raises some concerns. Students expressed a growing disenchantment with teachers as they progressed through schools. This trend is evident in the responses of both underachievers and achievers. The relatively greater degree of dissatisfaction on the

part of the achievers was unexpected and the impact it might have on their long term achievement and development is unknown. More research is needed on this particular issue.

### **Family Variables**

Research indicates that the family plays a critical role in the development of underachievement (Maitra, 1991; Van Tassel-Buska, 1989). The questionnaire included twenty-one questions dealing with family variables. These questions were designed to both corroborate and extend existing claims and knowledge. Questions ranged in complexity and depth of thought required. The section began with relatively straightforward questions about numbers and ages of siblings and progressed to assessments of parental encouragement and involvement.

With regard to personal and family variables there are a loose constellation of factors that appear to differentiate between the various categories of achievement. Before discussing specific items, however, it should be noted that students in this study tend to come from families that, relative to the Canadian average, seem remarkably stable and intact. Only two students reported living in single parent families. While this may reflect the Catholic values of the individuals and families involved, it is, nevertheless, not typical of the Canadian experience, and may limit the extent to which findings can be generalized.

### ***Parental Expectations***

The first theme involved parental expectations and demands. Question 1.15 asked students what expectations their parents had of them. Responses were placed in

one of five categories. Behavioral referred to complying with basic rules and regulations in the home, and at school. The Personal category was comprised of descriptors relating to drive, responsibility, and initiative - always doing one's best. Social Expectations placed an emphasis on the formation and maintenance of relationships. Academic involved school-based achievement, and Career related specifically to occupational and professional goals. Results are listed in Table 25.

**Table 25**

**Parental Expectations of Students x Grade and Achievement Level**

Grade	Underachievers					Transition					Achievers				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Grade 6	2	3	3	4	-	4	4	4	6	-	5	14	8	12	-
Grade 9	2	3	7	12	2	-	4	-	3	2	1	11	2	7	-
Grade 12	1	7	-	8	1	-	1	1	-	-	2	9	2	9	

- 1 Behavioral
- 2 Personal
- 3 Social
- 4 Academic
- 5 Career

There does not seem to be a great deal of difference between the groups at any grade level. Generally responses seem to indicate that most parents are perceived as emphasizing and expecting primarily personal traits and academic standards. A small deviation from this trend occurs at grade 9. Underachievers at this grade level list roughly twice as many social expectations as personal expectations. For the achieving group at this level, perceived personal expectations exceed social expectations by a margin of greater than 5 to 1. To what extent the students' perceptions are an accurate



indication of parental expectations - or simply a mirror of their own goals is not clear. In either case it may be that a relatively greater importance accorded to belonging and the development of social relationships may interfere with the development of personal responsibility and academic achievement, particularly if the peer group involved does not share academic values.

Students in most categories and grade levels share similar patterns of perceived parental expectations. However, the extent to which these expectations are actually met is another matter. The difference in the students' ability to meet academic expectations is reflected in their categorization in this study. Despite similar levels of ability, there is a great deal of variability in the level of academic achievement. There is evidence in this study to indicate that the inability to meet expectations is not just a school based problem, but is evident within the home as well. Underachievement in school may be symptomatic of a more general set of attitudes and behaviors.

### *Duties and Responsibilities*

Students were questioned about their responsibilities at home. Their responses were placed in one of five categories: None, light (schoolwork only), moderate (schoolwork and responsibility for one's own room and possessions), heavy (schoolwork, room and other household chores involving cleaning and cooking), and demanding which included all of the previously mentioned duties, as well as childcare responsibilities. A tabulation of student responses is listed in Table 26.

Table 26

**Level of Student Responsibilities at Home x Grade and Achievement Level**

Grade	Underachievers					Transition					Achievers				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Grade 6	-	-	-	4	2	-	2	2	5	-	-	1	2	15	4
Grade 9	1	2	2	8	3	-	-	1	1	2	-	-	-	8	4
Grade 12	3	2	2	4	1	-	-	-	1	-	-	2	1	10	3

- 1 None
- 2 Light
- 3 Moderate
- 4 Heavy
- 5 Demanding

The achievers had high levels of responsibilities and duties across all grade levels. Eighty percent or more of the students at all grade levels in the achieving category had responsibilities that were either heavy or demanding. Underachieving students started out with similar high levels of responsibility at the grade 6 level but the level of responsibility declined as the ages of the students increased. By grade 12 only slightly more than 40% of underachievers had responsibilities that could be characterized as heavy or demanding while 25% indicated that they had no responsibilities at all.

This pattern was mirrored in other sections of the questionnaire. For example, when asked how much time they devoted to homework, a marked difference was observed between underachievers and achievers, particularly at the grade 12 level. The mean responses of subjects in each of the categories indicates that achievers tend to do more homework than underachievers at each grade level. Among achievers, the least amount of homework done tends to occur at the grade 9 level. By grade 12 over half

of them are doing more than two hours of homework each night. For underachievers the amount of homework done decreases slightly, but steadily at each grade level. Underachievers in grade 12 tended to put in less time doing homework than underachievers in grade 6. A compilation of student responses is listed in Table 27.

**Table 27**

**Amount of Time Spent on Homework Each Evening x Grade and Achievement Level**

Grade	Underachievers					Transition					Achievers				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Grade 6	-	1	5	-	-	3	3	1	-	2	1	6	5	2	2
Grade 9	2	6	7	1	-	-	-	1	2	1	4	2	5	1	1
Grade 12	5	2	3	1	1	1	-	-	-	-	2	4	2	1	9

- 1      0 - 1/2 hour
- 2      1/2 - 1 hour
- 3      1 - 1 1/2 hours
- 4      1 1/2 - 2 hours
- 5      More than 2 hours

***Attribution***

Research has indicated that attribution appears to be a key factor in underachievement among gifted students, in that they tend to attribute success to ability rather than effort. A question raised in the research was whether attribution was related to work habits. It was assumed that there would be a link and that gifted underachievers would not exert effort because they would not tend to see the relationship between achievement and effort. Question 3.12a asked students if they felt they were responsible for their own learning. The results are listed in Table 28. The majority of students in all categories and at all grade levels indicated that they felt

responsible for their learning. When asked why (Question 3.12b) the majority of student responses indicated that learning was a choice an individual made and that effort was necessary for success. There did not seem to be any differences in student responses between groups. Thus, present findings do not tend to support the attribution/work habit link and gifted underachievement.

**Table 28**

**Degree of Acceptance of Responsibility for Learning x Grade and Achievement Level**

Grade	Underachievers			Transition			Achievers		
	1	2	3	1	2	3	1	2	3
Grade 6	-	1	5	-	2	5	2	2	20
Grade 9	2	2	11	-	-	4	-	1	12
Grade 12	2	-	10	-	-	1	-	2	15

- 1 No  
 2 Somewhat/Partially  
 3 Yes

In light of the fact that underachievers tend to see themselves as equally intelligent as the corresponding group of achievers (Question 3.10, Table 14) and acknowledge the importance of effort in attaining success (Question 3.12), their failure to do so is difficult to explain. Results from this questionnaire indicate they understand the relationship between effort and achievement but are unwilling or unable to exert the effort required.

A number of questions in this section explored the role of the parent in this regard. There is some evidence to support Rimm's observation (Rimm, 1988) that underachievers may have too much power in the family. Even though students in all categories perceive themselves as being subject to similar parental expectations, the

inability of parents of underachievers to get their children to meet their expectations is evident in a variety of situations. The parents of achievers, by way of contrast seem more demanding, firm, less flexible and better able to maintain a greater degree of control.

### *Parental Flexibility*

Question 1.13 asked students if it was possible to get parents to change their minds. Results are listed in Table 29. Underachieving students report almost unanimously that it is possible to get their parents to change their mind once a decision has been made. While a majority of parents in the transition and achieving groups are reported as willing to change their mind, a higher proportion than found in the underachieving group are not. Less willingness to compromise may signify a greater degree of clarity and rigidity in the expectations they have, and demands they make, of their children. Gifted achievers may be better able to meet parental expectations, in part because they have a better understanding of exactly what the expectations are.

**Table 29**

**Ability of Students to Get Parents to Change their Minds x Grade, Gender and Achievement Level**

Grade	Underachievers				Transition				Achievers			
	Yes		No		Yes		No		Yes		No	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Grade 6	2	4	0	0	3	1	3	1	7	12	1	3
Grade 9	14	2	0	0	2	2	0	0	2	6	4	2
Grade 12	6	3	1	1	0	0	0	1	3	7	3	0

### *Parental Encouragement*

It is interesting to note that in addition to being less flexible and perhaps more demanding than parents of underachievers, parents of achieving students also seemed to provide less encouragement to their children.

Question 1.18 asked students how much encouragement they received from their parents. Responses fell into one of three categories: None; Little (some encouragement, but minimal), or A Lot. The results are listed in Table 30.

**Table 30**

**Level of Parental Encouragement x Grade, Gender and Achievement Level**

Grade/ Gender	Underachievers			Transition			Achievers		
	None	Little	A Lot	None	Little	A Lot	None	Little	A Lot
Grade 6									
boys	0	1	1	0	2	4	0	1	7
girls	0	0	4	0	2	1	0	3	13
Grade 9									
boys	0	2	12	0	0	1	1	2	3
girls	0	1	1	0	1	2	0	2	5
Grade 12									
boys	0	1	7	0	0	0	1	4	3
girls	0	0	4	0	0	1	1	5	4

While the parents of students in this study are generally supportive of their children the greatest degree of parental support and encouragement was found in the underachieving group. Support in this category was consistently high at all grade levels. The level of

encouragement in the achieving group starts out equally high but gradually diminishes as the grade level increases. By grade 12, six achieving students report high levels of encouragement and seven report little or none. It may be that by grade 12 students in the achieving group are functioning relatively autonomously and don't seem to need the same amount of encouragement. It may also be the case that parents do not provide as much encouragement because of well established, clearer expectations and higher demands. Achieving students at higher grade levels may not get as much encouragement for doing so because parents have made it clear that they expect the students to attain at high levels. These two factors are not necessarily mutually exclusive, it may be that clear expectations and firm demands help develop a greater degree of self discipline and self-efficacy within the student that enables them to function relatively autonomously as they get older.

With regard to the role of the parent in fostering attitudes necessary for success, another cluster of variables emerged that seemed to be related to expectations and demands. This constellation of factors included "toughness", level of parental involvement, and parental identification.

### *Parental Demands*

The first of these factors, "toughness", seemed to be related to firmness and clarity of expectations and demands. Toughness was explicitly interpreted and defined by students in the study as demanding and expecting more. Students were asked in question 1.12 which of their parents was the toughest. Responses are listed in Table 31.

**Table 31****Student Assessment of Parent "Toughness" x Grade, Gender and Achievement Level**

<b>Grade</b>	<b>Underachievers</b>				<b>Transition</b>				<b>Achievers</b>			
	<b>Mother</b>		<b>Father</b>		<b>Mother</b>		<b>Father</b>		<b>Mother</b>		<b>Father</b>	
	<i>Boys</i>	<i>Girls</i>	<i>Boys</i>	<i>Girls</i>	<i>Boys</i>	<i>Girls</i>	<i>Boys</i>	<i>Girls</i>	<i>Boys</i>	<i>Girls</i>	<i>Boys</i>	<i>Girls</i>
Grade 6	1	2	1	2	0	2	5	2	0	6	7	9
Grade 9	5	1	7	1	0	1	2	1	3	3	4	3
Grade 12	6	2	4	2	0	0	0	1	2	4	7	4
Total	17		17		3		11		18		34	

Students in the underachieving group split their responses evenly between mothers and fathers. In both the transition and achieving groups the fathers were perceived to be the tougher parent by a margin of about 2 to 1. Underachievement seems to be somewhat related to demands and firmness of expectations not just in school but in the home as well. The father seems to play an important role in this regard but the role and impact of parent gender in underachievement is too complex to be able to draw any definitive conclusions.

Students were also asked which parent was most involved in their education (Question 1.21). Although fathers tended to become somewhat more involved in their child's education at the secondary level, mothers showed the greater degree of involvement in all categories, and at all grade levels, for both boys and girls. They volunteered for more school activities and programs, attended more parent teacher interviews and generally seemed more concerned about, and involved in, in their child's education. The tabulation of student responses is listed in Table 32.



**Table 32****Parent Involvement in the Student's Education x Grade and Achievement Level**

Grade	Underachievers			Transition			Achievers		
	1	2	3	1	2	3	1	2	3
Grade 6	5	1	-	6	2	-	20	2	2
Grade 9	9	3	2	2	1	1	9	1	2
Grade 12	8	-	1	1	-	-	6	2	3

- 1 Mother  
 2 Equal involvement  
 3 Father

On the one hand it could be argued that for the transition and achieving groups mothers tend to be more nurturing and supportive and are seen to assume less of a disciplinary role. It could be argued that those perceived qualities on the part of the mothers somehow contribute to the achievement of the student. One could also take the position that having a father with firm demands and expectations is also critical to the child's achievement and that their role as a disciplinarian is important to the child's success.

The third and final aspect relating to parental demands involved parent identification. Question 1.6 asked students which parent they were most like. In spite of the fact that fathers were perceived as generally being tougher and mothers more involved, more students said they were like their fathers and listed a greater number of reasons or points of similarity. Although greater father affiliation applies to all categories, it tends to be higher in the achieving group. Differences in parent identification are listed in Table 33.

**Table 33**  
**Parent Identification x Grade, Gender and Achievement Level**

Grade	Underachievers				Transition				Achievers			
	Mother		Father		Mother		Father		Mother		Father	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Grade 6	2	2	1	2	1	4	7	0	4	6	6	14
Grade 9	5	2	12	1	1	3	2	1	1	3	9	9
Grade 12	3	1	9	4	0	0	0	1	2	5	7	7
Total	15		29		9		11		21		51	

Students explained their perceived similarity to parents in terms of a variety of factors ranging from physical features to personality traits. Some students listed more than one point of similarity so raw scores listed may not correspond exactly to the number of subjects in any given category.

In view of the previous discussion perceptions of parental involvement and toughness the tendency of students to identify most closely with the father is somewhat surprising. While it may reflect the fact that males still dominate in most professional, political, and commercial enterprises, and may therefore be more likely to be seen as successful role models, role and gender may have a more subtle influence on achievement. The respective influence of male and female parental role models on underachievement might be a promising direction for future research.

### ***Summary***

Although the number of students in this study are small, several factors in this section of the survey seem to differentiate between achievers and underachievers.

While parental expectations are similar, the degree to which the expectations are met vary both in and out of school. There are indications that parents of achievers have clearer demands and expectations, are less flexible, are more successful in having their children meet their level of expectations and offer less praise and encouragement for success than do parents of underachievers.

The gender and role of the parent within the family also seems to be related to achievement levels. Among the achievers it is the father who is most often perceived as the toughest. Again, this quality of toughness seems related to the relatively clear and less flexible demands also associated with parents of gifted achievers. This quality tends to be more associated with fathers by students in the achieving group, though the reason is not clear.

For all groups of students it was the mother who was the most involved in the child's education. In spite of this, most students in all groups tend to identify with the father. The roles and perceptions of the mother and father seem to be important. A more detailed study of gender and parental influence might lead to a greater understanding of their relationships to underachievement.

## CHAPTER V

### CONCLUSION

#### *Overview*

This study reveals a number of important findings that contribute to a better understanding of gifted underachievement. The comprehensive nature of the project has examined, and in most cases, corroborated the importance of a number of variables research has associated with gifted underachievement, within a Canadian context. It has also investigated areas where gaps in the research literature exist, and has begun a preliminary exploration of relationships between selected variables. A summary of the study's main findings, the contributions made to the existing research base, and the implications for further research, within each of the primary areas of investigation will be briefly presented.

#### *Developmental Patterns in Underachievement*

There are suggestions throughout the study that junior high school may represent a critical period in the development of underachievement. The number of students making the transition to achievement from underachievement status decreased steadily with advancing grade levels. This trend was particularly pronounced in gifted males from grade 9 on. As well, differences between gifted achievers and gifted underachievers, with respect to a number of variables associated with achievement, are most pronounced at grade 9. Further research is needed to investigate why this period of development is particularly difficult for some gifted students.

### *Relationships with Others*

A number of questions in the study indicated that gifted underachievers experience more conflict with both peers and teachers, and that from grade 9 on show an increasing preference for solitary/passive types of interests, activities, and problem solving methods. A more detailed examination of the relationship between problems with socialization and achievement levels, particularly among adolescents, might yield information that would be useful in developing strategies and programs that would enhance the success of gifted underachievers in both domains.

### *Gender*

Underachievement in gifted individuals appears to be more problematic for males in primary and secondary school. In spite of the predominance of males in the underachieving group, and of the variety of factors that would suggest an advantage for females, a number of differences were found between male and female students that could have a bearing on the reported increase in female underachievement at the post secondary and career levels which is reported in the literature. Findings indicate that beginning in junior high, females began to take a more passive role in some aspects of their educational and social life.

Research on the development of passive attitudes in young gifted women, and on its relationship to subsequent underachievement might be a useful direction for further research.

### *School-Based Variables*

Study findings indicate a number of school-based variables that differentiate gifted achievers from gifted underachievers. Survey results suggest learning style

preferences may be a significant factor in both achievement level and subject preference. Gender differences with respect to both learning style and subject preference were also noted. It is possible that the development of teaching methodologies that incorporate a wider range of learning styles in all subjects and grade levels might help alleviate problems with subject-specific underachievement and might reduce gender differences noted. However, a more detailed examination of the nature of the relationship between learning styles preferences and achievement levels in gifted students is necessary.

Study results also suggest gifted achievers are more motivated by grades and marks. Underachievers did not seem to be as influenced by external evaluation. More research on methods of motivating gifted underachievers is needed.

There were two findings in this section of the study that were not expected. Dissatisfaction with school increased with grade level. While this had been expected, the study found that it was the achieving students who were the most unhappy. This increasing dissatisfaction on the part of achieving students could influence choices and achievement levels in terms of both post secondary education and career development. This dissatisfaction might also be a factor in the increase in female underachievement at advanced levels. Therefore, more research on the reasons, ramifications, and impact of increased dissatisfaction with school on select populations of gifted achievers and underachievers is needed.

Finally, this study found underachievers to be more content with larger schools. Research has indicated that underachievement is more likely in larger schools. While these two findings are not necessarily contradictory, it is interesting that underachievers were relatively happier in schools where they were less likely to be successful. Research investigating why underachievement is more prevalent in larger schools and

why underachievers seem relatively content in such settings might reveal organizational and structural variables that encourage or discourage underachievement.

### *Family Variables*

Results in this section tended to support findings in other sections of the survey and to corroborate, in most cases, previous research. Survey results indicated that gifted underachievers' lack of effort in school was paralleled by a corresponding lack of effort in the home. Underachievers were found to have less responsibilities and duties at home and to spend increasingly less time doing school-based homework. Previous research has indicated that attribution is a key variable in gifted underachievement: that these students do not make the connection between effort and achievement. Results from this study indicate quite clearly that they do understand the connection, but for reasons that are not clear, they are either unwilling or unable to exert the necessary effort. Further research is needed to examine other variables that may have an impact on the level of application and effort exerted by gifted students.

Parents of gifted achievers and underachievers were found to differ in a number of respects in their childrearing patterns. A more detailed and comprehensive comparison of the expectations, demands and methods of reinforcement and discipline between families of achievers and underachievers at a variety of age levels might identify key variables that contribute to underachievement. Such information could be of use to parents hoping to create a home environment more conducive to higher achievement.

Finally, there are indications in this study that fathers in particular influence achievement patterns in gifted children. The role of the father in the home, and its relationship to achievement levels warrant further investigation. Findings of such

research might be of particular relevance to single parent households where the father is absent.



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**Appendix A**  
**Interview Form**



**Able Student Interview**

**Name:**  
**Date of Birth:**  
**School:**

**Date:**  
**Gender:**  
**Grade:**

**Study Group:**  
**Marks:**

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**Personal/Family**

- 1.1 Who lives at home with you?
- 1.2 Number of brothers and their age/grade?
- 1.3 Number of sisters and their age/grade?
- 1.4 How are your brothers and sisters doing in school?
- 1.5 Parent occupation/education: Mother Father
- 1.6 Which parent are you most like? Why?
- 1.7 How do you get along with your Mother? Father? Brothers? Sisters?
- 1.8 Were your parents born in Canada? Grandparents?
- 1.9 Do you have grandparents living nearby? How often do you see them?  
What do you do with them?
- 1.10 Have you or any of your family members been sick or seriously ill?
- 1.11 What are your responsibilities at home?
- 1.12 How do your parents make you obey them? Which parent is the toughest?
- 1.13 Can you get your parents to change their mind after they have made a decision?
- 1.14 Does anyone in your family expect you to do things perfectly?
- 1.15 What expectations do your parent(s) hold for you?
- 1.16 What aspirations do your parent(s) hold for you?

- 1.17 What is the typical reaction of your parents to your grades? achievements? academic choices? Is that problematic?
- 1.18 Describe the amount of encouragement offered by your parent(s). (none, little, a lot)
- 1.19 Describe the type of encouragement offered by your parent(s).
- 1.20 What is the level of your parent(s) involvement in your school?
- 1.21 Which parent is most involved?

### **Personal/Family**

- 2.1 Do you have any special interests or hobbies? Things you really like to do?
- 2.2 Do you enjoy competitive games or sports? What happens when you win or lose?
- 2.3 How much TV do you watch each day? Video games? Computer?
- 2.4 Approximately how many close friends have you in school? Out of school?
- 2.5 Are your friends welcomed in your home by the rest of your family?
- 2.6 What is your best friend like? What do you do together?
- 2.7 Is it important for you to be like the other kids at school?
- 2.8 What makes you feel nervous?
- 2.9 What do other people say about the way you look (appearance)?
- 2.10 What do you feel when people say that about you?
- 2.11 What do you think about the way you look?
- 2.12 Do you freely express your feelings, both positive and negative, in school? At home? With friends?
- 2.13 Within your circle of friends, do you tend to lead, follow, or do both?
- 2.14 When something goes wrong, what do you usually do?
- 2.15 Do you experience conflicts with peers? Teachers? Administration? Examples. To what extent?
- 2.16 Who is/are the person(s) who are most important to you? Why?

- 2.17 Who is/are the most influential person(s) in your life? Why?
- 2.18 What male or female would you name as a hero? Why?

### **Personal/Academic**

- 3.1 What other schools have you attended?  
retentions:  
promotions:
- 3.2 List the order of preference for: Math: Science: Social Studies:  
Language Arts: Phys. Ed.: Option:  
(For least and most favorite ask why.)
- 3.3 What other programs have you attended?  
Resource Room: Special School Program:  
Summer School Program: Others:
- 3.4 What did you like/not like about other programs attended?
- 3.5 How long do you spend on homework each night?  
Where do you do it? When? Who helps you?  
How much help do you need?
- 3.6 When you finish an assignment, how do you feel about your work?
- 3.7 What extra-curricular activities do you participate in?
- 3.8 What awards (if any) have you received?
- 3.9 What is your preferred learning style?
- 3.10 What is your assessment of yourself in these areas: (Q: poor, fair,  
average, very good, outstanding)?
- 3.11 Do you possess any special talents, abilities, skills?
- 3.12 Do you feel that you are responsible for your own learning? Why?
- 3.13 Does your behavior within the classroom meet with teacher expectations?  
If not, why?

### **School Environment**

- 4.1 Do you like your school? Why/why not?
- 4.2 What is the best part of school?

- 4.3 What is the worst part of school?
- 4.4 What class or classes ...
- do you like the most?
  - do you dislike most?
  - are easiest?
  - are most difficult?
  - do you get the best grades?
  - do you get the worst grades?
- 4.5 What would you like to learn about at school?
- 4.6 What grades did you get on your last report card?
- 4.7 What grades do you think you should get?
- 4.8 What were your best years in school? Worst? Why?
- 4.9 Are the demands and expectations of the classroom setting reasonable and appropriate to your needs?
- 4.10 How would you rate your school policies, rules, regulations?  
How can they be improved?
- 4.11 Is competition promoted among students at your school? Do you regard competition within the classroom as healthy, good or bad?
- 4.12 What is your status within the classroom? Within the school?
- 4.13 What could you do to make the school environment more positive?
- 4.14 What could school staff do to make the school environment more positive?
- 4.15 Is absenteeism a problem you are facing in your present school?
- 4.16 Why are you attending school?
- 4.17 Do you feel you have control over your school life? What aspects?
- 4.18 Are you content with the size of your school? Why/Why not?
- 4.19 Do you have a positive attitude toward your school? Why/Why not?
- 4.20 Do you have a positive attitude toward your social life at school?  
Why/Why not?
- 4.21 If you could make changes in your school, what would they entail?
- 4.22 Do you have a feeling of belonging at your school?

- 4.23 Is there a sufficient variety of courses offered at your school?
- 4.24 Do the rules and regulations help you to be more responsible?

### **Teachers**

- 5.1 Do you feel your school administrators are committed to support you as a student in the school?
- 5.2 Do you get along with your teachers?
- 5.3 Do teachers attempt to create a warm, creative atmosphere in your classes?
- 5.4 Are you treated as a unique individual within the classroom?
- 5.5 Do your teachers show concern and respect for you?
- 5.6 Are your teachers willing to provide individual help when it is requested or otherwise indicated?
- 5.7 Do teachers encourage students to ask questions? To challenge ideas?
- 5.8 Do the teachers in your school attempt to make curriculum topics challenging and fun?
- 5.9 Are you satisfied with the teaching styles in your school?
- 5.10 What are the most important characteristics of a good teacher?
- 5.11 Have any teachers affected your attitudes and/or preferences for any subject(s)? Which subject(s)? How?
- 5.12 Do you feel you are a valued member of the group in your classroom? In your school?
- 5.13 Have you experienced any problems with teachers? Why?
- 5.14 Have you ever received assistance or advice from your school counsellor? To what extent?
- 5.15 What role does the counsellor perform at your school?

### **Special Notes and Observations:**