THE UNDERACHIEVING GIFTED STUDENT: AN EVALUATION OF THE
RELATIONSHIP OF LEARNING STYLE AND ACADEMIC SELF-CONCEPT TO
ACADEMIC ACHIEVEMENT
AND
A CASE STUDY OF ONE GIFTED HIGH SCHOOL STUDENT

By

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(ABSTRACT)

The lack of academic achievement at the high school
level among some gifted students has long been a concern of
educators. This research had two purposes: First, to
determine if there was a relationship among learning style,
academic self-concept and academic achievement with gifted
high school students; and second, to understand an
individual who was representative of these characteristics
identified in part one and determine what life experiences
have affected this student's underachievement.

A quasi-experimental design was selected for the
quantitative portion of this study to accomplish the first
purpose. The design began with the hypothesis that there
was a relationship among these variables and employed the
use of two self-report instruments, the Learning Style
Inventory by Dunn, Dunn, and Price (1989) and the Student

Participants for this portion of the study were taken
from a population of 93 gifted students at one suburban high
school. A parent meeting was held to explain the purpose of
the testing; then permission letters were sent to the parents. Seventy-four parents responded, establishing the sample size.

The results were compiled using the SYSTAT statistical program. Academic achievement was high for gifted students who showed a preference for studying in a quiet, warm place, were persistent and parent/teacher motivated, and who preferred to learn in several ways but did not prefer to learn through auditory methods or to move around while studying. This finding was the same regardless of the academic self-concept.

The selection of the qualitative portion of the study was based on the relationship among learning style, academic self-concept, and low academic achievement. The selected student had a low academic self-concept score, a learning style different from the one stated above, and low academic achievement based on the grades during the year in which the testing took place.

This study identified a number of factors which had an impact upon this individual and highlighted the importance of professionals’ awareness of each individual’s unique perceptions and life situations that affect underachievement rather than looking for a panacea.
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CHAPTER I

INTRODUCTION

Three percent of the student population in the United States are gifted children. Approximately fifteen percent of these gifted students perform well below their identified ability levels (Green, Fine and Tollefson, 1988). The criteria Green, et al., used to identify underachievers included the following: "1. earning a 'C' or below in one or more major academic subject, 2. having at least a one year difference between expected and actual performance on a standardized achievement test, or 3. failing to complete work or submitting incomplete work at least 25 percent of the time as indicated by teacher records" (p. 268).

Why do some gifted children fall behind academically? Kaplin (1983) described potential as "a force without direction" (p. 75). Redding (1989) stated that "the verbally gifted underachiever was intrinsically motivated, energetic, and creative, yet undisciplined, impulsive, and disdainful of routine school tasks" (p. 283). "Many gifted underachievers do poorly in school due to a difficulty in completing tedious school tasks over a sustained period of time" (Whitmore, 1986, p. 66).

Butler-Por (1987) outlined prevalent characteristics of gifted underachievers:
"1. A large gap between quality of oral and written work
2. Failure to complete daily school work
3. Poor execution of work
4. Persistent dissatisfaction with accomplishments
5. Avoidance of trying new activities
6. Low self-image
7. Aggressive behavior
8. Lack of group functioning
9. Lack of concentration
10. Unrealistic goal setting (too high/too low)
11. Difficulty with peer relationships
12. Poor attitudes in school
13. Dislike of drill and memorization" (p. 117)

Although Redding believed that verbally gifted underachievers were intrinsically motivated, Butler-Por believed that often the intrinsic or self-directed motivation, usually found in gifted children, was replaced by an external locus of control, and the children experienced a fear of failure or even a fear of success (p. 18-23). When these children are in the gifted classes, "they may not feel competitive and may be fearful that they cannot keep pace" (Krissman, 1989, p. 161); but, when placed with students of average ability, they may develop a lack of
affiliation.

However, "overvaluing cognitive abilities may lead to several difficulties" (Kaplin, 1983, p.75). Because the gifted youth may often hear that they "have so much potential" (p. 75), they may "overvalue their cognitive abilities, expecting life to be logical and rational...They cannot do everything well nor can they do one thing well all the time" (p. 76). Mufson, Cooper and Hall (1989) found that "parental attitude toward the child appears to be a major factor in underachievement" (p. 5). They indicated that "the children perceive that their worth is contingent on an ability to achieve in school" (Whitmore, 1979, p. 38).

High school counselors are particularly aware of the need for students to maintain a grade point average (G.P.A.) above a 3.0 when applying to colleges. Most students in the gifted education classes do plan to attend colleges; and, often the colleges they choose are very selective, requiring both a G.P.A. over 3.0 and high Scholastic Aptitude Test (SAT) scores, usually around 1200. Therefore, the counselor's challenge is to begin early in the student's high school career to monitor the academic progress and provide interventions which might assist the student to achieve academic success.
Motivation for Learning

J. W. Atkinson (1964) found that "the student performance was a joint function of relatively stable personality characteristics interacting with the variable properties of the immediate environment" (p. 72). Erickson (1974) further explained "the personality-motivational characteristics of a student function as a selective screen through which he/she perceives the teacher and the class" (p. 67) and that achievement motivation was defined as a "strong desire to compete successfully against a standard of excellence" (p. 68).

Atkinson (1974) refined Thomas Edison's supposed claim that "Genius is one percent inspiration and ninety-nine percent perspiration" when he stated "motivation influences both efficiency in the execution of an activity (and, therefore, the level of performance) and persistence or, more generally, the time spent in a particular endeavor" (p. 404). He further suggested that "the level of performance is fifty percent the difference in true ability and fifty percent the result of differences in strength of motivation" (p. 404).

Dweck and Elliott (1983) "concluded that children with learning goals focus on the process of learning rather than the outcome, view challenge and uncertainty as stimulating, are not threatened by minor failure, and set long-term goals
and standards" (pp. 643-691).

"When it comes to motivation," according to W. Glasser, (1990), however, teachers "are looking for something that does not exist (p. 39)." Glasser believed that behavior was not motivated by a stimulus but rather behavior satisfied a need. "What happens outside of us has a lot to do with what we choose to do, but the outside event does not cause our behavior" (p. 41). Because "individuals choose to act on this outside information" (p. 41), evaluating teachers' behaviors without looking at student perceptions would be meaningless.

Maslow (1970) stated that "the study of motivation must be in part the study of the ultimate human goals or desires or needs" (p. 22). Although the goals may be universal, for example self-esteem, the "roads taken to achieve those ends" are culturally and individually determined (p. 23).

The Counselor's Role

The challenge then for the counselor seems to be not how to motivate students but rather how to understand the individuals' process of learning and their achievement motivation. This individual process can be considered their learning style. Vail (1987) saw learning style as the "intellectual fingerprint, unique and permanent" (p. 6). This learning style is composed of "aptitudes, compensations, and weaknesses" (p. 7), and a student "who
learns one way is not being purposely uncooperative" (p. 8).

The achievement motivation, however, cannot be
capsulized so easily. What makes one individual want to set
goals and not be threatened by minor failure and another
not? What makes an individual view challenge as stimulating
and set learning goals? Perhaps the person's academic self-
concept can provide a piece to this puzzle. Brookover,
Thomas, and Patterson (1964) found that academic self-
concept was an important predictor of school success. How
students perceive their ability to complete school tasks and
how they believe others see their school performance affects
achievement (Wick, 1990, p. 2). A study by Anita Li (1988),
found that with gifted children "the relationship between
perceived scholastic competence and intrinsic motivation is
significant and positive in that children with more
favorably perceived scholastic competence are also more
intrinsically motivated to seek challenging work" (p. 179).

A program developed by Patricia Supplee (1989) in New
Brunswick, New Jersey, for elementary school gifted
underachievers focused on improving academic achievement and
self-esteem which had been identified as factors in
underachievement. The program's academic components
included identified interests and preferred learning styles
(p. 163). Coupling self-concept with the learning style,
along with school satisfaction, the researchers tried to
focus on the needs of these children. "The summative evaluation at the end of the two phases showed significant gains in both affective (as measured by the Coppersmith Self-Esteem Inventory) and cognitive areas (as measured by the Woodcock-Johnson Achievement Batter, Part II) (p. 164).

Approaching this situation from a systems perspective, it becomes evident that the apparent discrepancy in grades versus ability has a foundation in not only the student who is underachieving, but also the entire system within which this person operates both at school and at home. In this system the child has developed a perception of the gifted learner from input by the school and his parents.

Much research has been done on the gifted child focusing on achievement and the systems, both social and educational, in which the gifted child functions. Researchers have tried to find a relationship between dysfunctional families and achievement (Green, et al., 1988) and instructional environments and achievement (Dunn, 1987).

However, there always seemed to be something missing, the individual's perception of his/her academic achievement and this child's perception of how others see this achievement. No matter how excellent the home life or how individualized the educational curriculum, the students have the ability to perceive their circumstances in any way that they choose. For example, if individuals, coming from
well-functioning families, are placed in a gifted education program and are enrolled in classes which will challenge them in a way that suits the individuals' learning style, they still may choose to do well or not; and neither counselors, nor parents, nor teachers have control over the situation. They do, however, influence individuals in their decisions to achieve. Therefore, it becomes necessary to understand these children's academic self-concepts in relationship to giftedness and learning styles in order to assist them in achieving academically.

**Intelligence**

Although there are many differing views with regard to what intelligence actually is, Resnick (1976) saw these "not as competing viewpoints, but rather as multiple windows on the phenomenon of human intelligence" (preface x). As previously indicated, people have been formulating methods of testing intelligence formally since Binet. These tests have been used primarily for prediction of academic success and "have generally been considered one of psychology's major success stories" (p. 1). Resnick saw a need for a "common set of dimensions that describe the actual mental processes involved in particular tasks" which underlie what she called "intelligent performance" (p. 4).

Leona Tyler (1976) believed that perhaps it was time to discontinue defining intelligence simply as "learning
ability" and encompass motivational or temporal components such as being able to support oneself in "fluid intelligence" (p. 19). Carroll (1976) saw "the formulation of a human information processing viewpoint in which performance of cognitive tasks was described as the operation of integrated programs for the processing of information available from sensory channels and from memory stores assumed to exist in the central nervous system" (p. 28). Cooley (1976) questioned "whether there was really a ceiling with regard to general intelligence that any given person can obtain" (p. 59).

William Charlesworth (1976) emphasized the "observable portion of the individual's overall behavior, behavior produced in the context of the everyday natural environment as well as in such contrived settings as test and laboratory situations" (p. 148). He saw intelligence as a "process of acquiring raw material" which resulted from that individual's interaction with his/her environment (p. 148) because he saw "intelligence as an important mode of adaptation" which had to be "viewed in terms of environmentally imposed problems" (p. 150).

Charlesworth also believed that "It may be more important to cease to emphasize the invention of new intelligence tests...and instead attempt to establish an empirical basis for adaptational criteria by studying
intelligent behavior as it occurs in everyday life in the natural environment" (p. 158).

Glaser (1976) referred to "new aptitudes" when he discussed the concept of intelligence. These "new aptitudes provide clues about how cognitive processes might be modified or employed for learning" because they involve the "differential development, acquisition, and performance of complex behaviors" (1976, p. 350). He felt that these "new aptitudes" would "have a more significant implication for education than do the present correlationally derived relations between aptitude tests and school success" (p. 350). In addition, a new set of measures of intelligence based on processing would "move many psychometric predictions from static to dynamic statements about what can be done to increase the likelihood of success" (p. 351).

Perception

Hermann von Helmholtz suggested that the mind or the intellect, upon receiving data of present and past sensations, has the special power of fashioning percepts" (Pastore, 1978, p. 355). When someone compliments two students wearing identical outfits, one might respond, "Thank you," while the other sarcastically retorts, "Oh, sure!" The difference may come in the personal perception by the students based on a multitude of factors. These might include past experience, relationship with the other
person, time of day, or health. Because of this perception, a researcher looking at the relationship between intelligence and academic achievement may get a more accurate picture if consideration were given to this precept in the research.

Sigmund Freud spoke of an "identity of perception" in which "the id considers the memory image to be identical with the perception itself. The id fails to distinguish between a subjective memory image and an objective perception of the real object" (Hall, 1954, p. 25).

Considering a student's academic self-concept may help the counselor who uses techniques such as reframing and positive connotation in getting a better understanding of the achieving and non-achieving student. "The Kantian assumes that mental images are wholly the creations of the organism" (Efran, et al., 1988, p. 29). The constructivists, however, do not believe that "individuals and families operate in a social vacuum" (p. 34). On the contrary, they believe that humans do what they do in connection with what goes on around them" (p. 34). Having insight into a student's academic self-concept may be the first step in understanding a little part of what makes some students achieve and others fail.

According to Adler (1979) "early in our life we acquire a perception of ourselves and the world around us - a
subjective point of view. This perception, then, determines behavior perhaps more than 'reality' does" (p. 15). For Adler when "perceptions are vague and indistinct, behavior will be similarly ambivalent. Conversely, when perceptions are clear and accurate, behavior will be precise and efficient. In essence, behavior is a function of perception" (p. 15).

Therefore, as Carl Rogers (1951) so aptly stated, "The best vantage point for understanding behavior is from the internal frame of reference of the individual him/herself" (p. 492).

Learning Style

Learning styles are personal approaches to education whether inside or outside the classroom. Learning style specialists have viewed the individualized approaches to education from both perceptual and psychological models.

Rita Dunn described learning style as "a biologically and developmentally imposed set of personal characteristics that make the same teaching method effective for some and ineffective for others" (Dunn, Beaudry, and Klavas, 1989, p. 50). Her perceptual approach encompassed the students' need for "quiet or sound, bright or soft illumination, warm or cool room temperatures, seating arrangements, mobility, or grouping preferences" (p. 50). The Learning Style Inventory, "a comprehensive approach to the identification
of how students prefer to function, learn, concentrate, and perform during educational activities" (Dunn, Dunn, and Price, 1989, p. 6), was designed to identify these styles.

Attention to these students' learning style may add an additional perspective in understanding the underachieving gifted children's comprehensive picture.

**Need for the Study**

High school counselors are often at a loss to understand and help the underachieving gifted students. There is no clear data which gives the counselors a framework from which to look at and assist these students. With the information provided by this study the counselor will be able to identify the underachieving students' perspective on academic self-concept through the **School Attitude Measure**, be aware of the way these students perceive their learning style through the **Learning Style Inventory**, be aware of how they perform in the classroom through the observations, and examine how these individuals see themselves through personal interviews. In addition, the counselor may gain insight into the family systems through interviews with family members and into the school social and academic systems through interviews with faculty familiar with these students.

The counselors would be able to have a framework from which to begin to understand the gifted underachiever.
Becvar and Becvar (1988) explained the importance of giving a person a "conscious awareness of the alternatives offered by the metaperspective that the 'map is not the territory' (p. 213). The counselors can offer that metaperspective by looking at learning style, academic self-concept and the system within which the student operates. Jay Haley (1976) stated that the task of the counselor was "to formulate a presenting symptom clearly and to design an intervention in the client's social situation to change that presenting symptom" (p. 1).

With this profile of the students, the counselor will have a starting point from which subsequently to understand and help them identify problems which are solvable rather than allow them to continue to be overwhelmed by the concept of being underachievers.

**Problem Statement**

The purpose of this study was two-fold. The first was to determine if there was a relationship among learning style, academic self-concept and academic achievement with gifted high school students. The second was to understand an underachieving gifted student who was representative of these characteristics identified in part one and determine what life experiences have affected this underachievement.
Research Questions

The research done in this study took two forms. The first was a quantitative study which explored the following research questions:

1. Will gifted students who have Learning Profile I have higher achievement grades independent of academic self-concept than gifted students who have Learning Profile II?

2. Will gifted students who are in the upper 50th percentile in academic self-concept on the Student Attitude Measure have significantly higher achievement grades than gifted students in the lower 50th percentile in academic self-concept independent of learning style?

3. Is there a difference in grades as a function of the interaction between Learning Profile and academic self-concept? Will this difference hold across gender?

The second portion of this research was qualitative. The testing information, which in itself was an important aspect of this research, was used to determine which student to select for an ethnographic study. With the test data, a student was selected who was representative of the test results. Specific criteria for selection is outlined in the Criteria for Case Study Selection section of Chapter IV. An initial interview was conducted discussing learning style, self-concept, and family dynamics as perceived by the student. Classroom observations of the student selected
were made to see if there were some factors in study habits, goal setting and peer interactions which were not included in the inventories. The pre-interviews and observations included the following categories based on characteristics outlined by Butler-Por (1987):

1. the quality of oral and written work
2. completion of daily assignments
3. personal satisfaction with accomplishments
4. participation in new activities
5. aggressive and/or non-aggressive behaviors
6. group functioning
7. concentration
8. goal setting
9. peer relationships

Therefore, the following questions were explored from the viewpoint of further information to explain the inventory results:

1. What is the student’s family system?
2. What behaviors, both academic and social, are displayed in the classroom?
3. What are the student’s study habits at home not delineated by the inventories?
4. How might the student’s peer relationships be described?
5. What types of goals does the student have?
A post-observation interview was also conducted one week after the last observation. This interview included self-evaluations of personal relationships, classroom situations, and goal setting.

In addition, interviews with a parent and teachers who were familiar with this student were conducted to substantiate information obtained from the student interviews and to gather further information which might explain inconsistencies between ability and achievement.

The quantitative data were processed using the SYSTAT computer program. The qualitative data were evaluated and summarized in a case study format.

Definition of Terms

1. **Learning Profile I** - A profile in which learners showed preferences on the Learning Style Inventory in the categories of Quiet Noise Level, Warm Temperature, Adult- and Teacher Motivation, Persistence, and Several Ways to Learn and no preference for Auditory learning or Mobility.

2. **Learning Profile II** - A profile which showed any other combinations of preferences on the LSI in the categories of Sound, Motivation, Persistence, Auditory, Learning Preference, Temperature and Mobility than those listed in Learning Profile I.

3. **Gifted Students** - Students who have been selected for the Gifted and Talented program established at the high
school based on their scoring in the ninety-seventh to ninety-ninth percentiles on the Cognitive Abilities Test and the Iowa Test of Basic Skills or other aptitude and achievement tests if the student has transferred from another district.

4. **Achievement** - For this research, the academic grades were used. These academic grades were based on the scale from the high school in the study and were given points according to the grading scale as follows: A (4.0), B+ (3.4); B (3.0), C+ (2.4), C (2.0), D+ (1.4), D (1.0), F (0.0).

5. **Underachievement** - "C" or lower in at least one of the academic classes which included English, mathematics, science, and social studies. Although Gardner included the arts which encompassed musical intelligence, elective classes were not included in this study.

**Significance of the Study**

With an increasing importance placed on college education and increased significance being placed on academic achievement for college entrance, most students and their parents want academic success.

Counselors who have visited individual college admission programs reported that colleges were looking more closely at the student's achievement grades as well as the difficulty level of the courses which must include at least
five academic classes in the junior and senior years. Advanced Placement courses and honors courses were judged by the admissions boards as challenging and were looked upon favorably when satisfactory grades (a "B" or 3.0 average usually) were maintained.

The Scholastic Aptitude Test results also were a significant part of the application since it has been considered a reliable predictor of academic success. For some colleges there was a sliding scale, the higher the SAT the lower the grade point average that would be accepted, with the reverse being also true.

Weaknesses on the transcript needed to be explained, and the counselor might have some further insight into these weaknesses with the profile provided through this research. Extracurricular activities, particularly those with leadership roles, might play a part in the selection process, and the profile might help explain that the student was an individual worker and made contributions to the school or community independently of these established programs.

When the counselors have a framework which includes the learning style and academic self-concept of the student as well as the achievement scores, they may be able to provide the students with a more accurate picture of themselves. This framework may be useful in understanding the present
achievement or underachievement, finding ways to help the student increase academic strengths, and even helping the student in ultimately selecting an appropriate college.

Organization of the Study

In order to familiarize the reader with the scope of this study, a review of the remaining chapters is provided.

Chapter II includes a review and summary of literature related to the gifted student. This review is divided into the following categories: Introduction, Giftedness, Achievement/Underachievement, Approaches to Learning Style, Self-Concept, Academic Self-Concept, and Summary.

Chapter III addresses the research methods utilized in the study. The chapter divisions are as follows: Introduction, Problem Statement, Design of the Study, Research Questions, Population, Sample, Limitations, Instrumentation, Procedures, Data Analyses, Threats to Internal Validity, Threats to External Validity, and Conclusion.

Chapter IV contains the statistical findings of this study as well as the ethnographic information from the case study.

Chapter V has conclusions and makes recommendations for further research.
A complete list of references is found at the end of the study to provide the reader with resources for further investigative research on this topic.
CHAPTER II
REVIEW OF THE LITERATURE

Introduction

A study of the gifted underachiever is multifaceted. The concepts of both giftedness and underachievement encompass a multitude of interpretations. This literature review provides an overview of these concepts as well as those of learning style and self-concept to provide the reader with background which was foundational to the research. The research is captured in the following sections: Giftedness, Achievement/Underachievement, approaches to Learning Style, Self-Concept, Academic Self-Concept, and Summary.

Giftedness

"Since the advent of the Binet IQ test in 1905, we have been able to label giftedness" (Swanson, 1979, p. 101) at least in accordance with this type of intelligence testing. Swanson defined the gifted as having "cognitive abilities which place them in the upper three to five percent of the population" and having an IQ of 130 or above (p. 105). A caution needs to be made, however, with regard to the emphasis being placed on these tests since, according to Gardner (1983), "This number is likely to exert an appreciable effect upon a child's future, influencing the way in which the student's teachers think of him/her and
determining eligibility for certain privileges. The importance attached to the number is not entirely inappropriate; after all, the score on an intelligence test does predict one's ability to handle school subjects, though it foretells little of success in later life" (p. 3).

However, there are problems when establishing a comprehensive definition of giftedness. According to Hagen (1980) "a major problem is to develop a clear and precise definition of giftedness in terms of the characteristics or behaviors that indicate it" (p. 1). "At each level of education at which we attempt to identify giftedness in an area, we are basically making a prediction about the future performance of an individual" (p. 4) because "the ultimate criterion for giftedness is not performance in school but the quality of the contribution that an individual makes as an adult" (p. 3).

Educators, however, do not have the luxury of waiting to measure adult contributions and must establish factors upon which to base the identification of giftedness. This study focused on academic giftedness which often looks at three indicators of potential giftedness according to Hagen (1980):

1. the present level of achievement in the academic area
2. general learning abilities or problem-solving skills
3. motivation or commitment to achieve" (p. 7)

Hagen further indicated fifteen "characteristics of potential giftedness which can be appraised by teachers, parents and others who have had extended opportunities to observe students:"

"1. Student’s use of language
2. Quality of student’s questions
3. Quality of examples, illustrations, or elaborations that a student used in explaining something or in describing events or in telling stories
4. Student’s use of quantitative expressions and quantitative reasoning
5. Student’s ability to devise or adopt a systematic strategy for solving problems and to change the strategy if it is not working
6. Special skills students exhibit that are unusual for their age or grade
7. Student’s innovative use of common materials in the classroom or outside of it
8. Student’s breadth of information
9. Student’s depth of information in a particular area
10. Student’s collections of materials or hobbies
11. Student’s persistence on uncompleted tasks
12. Student’s absorption in intellectual tasks
13. Extensiveness of student’s exploratory behavior
14. Student’s criticalness of his or her own performance
15. Student's preferences for complexity, difficulty, and novelty in tasks" (p. 8)

Butler-Por (1987) identified the gifted as curious and somewhat unconventional in ideas and methods of learning (p. 13). Priscilla Vail (1987) stated that gifted individuals display the following characteristics which may either be individual or in clusters: "rapid grasp of concepts, awareness of patterns, energy, curiosity, concentration, exceptional memory, empathy, vulnerability, heightened perceptions, and divergent thinking" (p. 2). For years teachers have been identifying these children as having "advanced vocabulary for their grade level, independent reading habits, quick mastery and recall of factual information, self-initiation, self-confidence, and adaptiveness" (Swanson, p. 110). Swanson also emphasized, as Gardner, that "one must exercise caution when employing any single index of giftedness" (p. 114).

Achievement/Underachievement

Lawrence J. Green in his book Kids Who Underachieve (1986) called achievement "a mixture of egoism (sense of self), desire, intensity and commitment" (p. 43). The achieving child was seen as having certain qualities - "self-actualization, goal direction, self-confidence, desire, and self-esteem" (p. 48).

Redding (1989) stated that academic underachievement
for the gifted was more than a lack of motivation. The problem "may result from a mismatch between the school's curriculum and testing procedures and these children's learning styles" (p. 275). The educational system, he believed, plays a part in the achievement or underachievement of the gifted child (p. 275). Sometimes this child "may even sacrifice grades... for independent learning opportunities" (p. 276). "Educators who understand conundrum (underachieving gifted) children's learning style can often prevent trouble by anticipating the demands of the curriculum" (Vail, p. 19).

"Low grades may reflect the fact that they did not achieve the behavioral norms in terms of class requirements, preferring instead to learn creatively" (Redding, p. 279). "Gifted underachievers will achieve if tasks are challenging and interesting, rather than tedious or easy" (p. 279). "They demonstrate little tolerance for tasks requiring attention to detail" (p. 280). Vail contends that:

"In high school, the successful student relies on a good memory, well-developed concepts, reasonable psychological development, and solid mechanical skills. Students with ragged development may have trouble with the transitions these years encompass, from childhood to adulthood, from one subject matter to another, and from enjoyment of activities they're good at to struggles with subjects that are difficult. Intelligent or brilliant young people who feel unsuccessful in school may reject the idea of further education. They may dropout, turn against society, or harm themselves" (p. 21).
Fimian, Fastenau, Tashner, and Cross (1989) reinforced this belief by indicating that some gifted youth experienced a great deal of stress throughout their school experience (p. 139).

Howard Gardner who advocated alternative approaches to human intelligence from the general intelligence, "g" factor supported by Charles Spearman and Arthur Jensen, suggested that these individual differences in "multiple intelligences" and in the ways individuals "carry out different tasks, solve diverse problems and progress in various domains, challenge an educational system that assumes that everyone can learn the same materials in the same way and that a uniform, universal measure suffices to test student learning" (Gardner, 1991, p. 12).

From the family systems approach "gifted children present unique challenges to families, and having a gifted child can be a family stressor" (Zuccone and Amerikaner, 1986. p. 590). "Whereas parents may take pride in the gifted child, they may also perceive the child as a social, emotional, and financial drain" (p. 590). There may be a problem with "generational boundaries around the roles of parent and child because of the child who functions intellectually at an adult level" (p. 590). The child may be hearing the family’s concern with this challenge and interpret this distress personally seeing him/herself
negatively. Although a child's giftedness should not be singled out as the identified problem leading to family stress, it may be one component to be considered.

In a study of gifted underachievers in the southern suburbs of Chicago, Joyce Van Tassel found that "approximately 45 percent of the gifted students with IQ's over 130 have grade point averages lower than C" (Betts, 1986, p. 587). She believed that these students "have problems that are not simply academic but social and emotional" (p. 587) as well. She saw these gifted youth as lacking self-confidence and self-esteem. This self-esteem may affect a student's attitude toward school subjects which Estes, Estes, Richards, and Roettger (1981) indicated "may be more crucial to his/her future than the exact knowledge that s/he accumulates" (1981, p. 1, cited in Golicz, 1982).

Approaches to Learning Style

"Some students are disposed to act 'like holists' (comprehensive learners) and others like 'serialists' (operational learners), with more or less success. There are also students able to act in either way, depending on the subject matter, and if they excel in both pursuits, we refer to those students as versatile. It is these distinctions which can, more appropriately, be referred to as learning style" (Pask, 1976, p. 133).

"Learning Style can be described as a set of factors, behaviors, and attitudes that facilitate learning for an individual in a given situation... There is no right way to learn or to teach, but there are certain styles more
appropriate for a given situation" (Brown and Hayden, 1980).

According to Cornett (1983) learning styles are
"inherited characteristics which are influenced further by
the environmental factors which include culture, personal
experience, maturation and development."

Messick (1983) talked of cognitive styles as a manner
in which individuals "perceive, remember, think, and solve
problems (cited in Reiff, 1990, p. 8)." Reiff further
divided this cognitive style component into brain dominance,
conceptual tempo, mindstyle, modality, multiple
intelligence, and psychological. Reiff's compilation of
learning style information came up with the following style
characteristics in addition to Messick's cognitive style:

"Affective components of learning styles include
personality and emotional characteristics related to
areas such as persistence, locus of control,
responsibility, motivation, and peer interaction.
"The physiological component is biologically based
and is related to sex differences, nutrition and
reaction to physical environment" (p. 9).

Reiff explained that "learning modalities are the
sensory channels or pathways through which individuals give,
receive and store information...These modalities include
visual, auditory, tactile (haptic), kinesthetic, smell
(olfactory), and taste" (p. 17). She explained that most
students employ all these modalities but have particular
strengths and weaknesses which help or hinder them in
certain learning situations.
Rita Dunn (1987), professor of education and director of the Center for the Study of Learning and Teaching Styles at St. John’s University, identified three different learning styles. The auditory learner remembers through hearing; the visual learner remembers through seeing; and the tactile learner remembers through manipulation of objects. The areas of learning preferences on the Learning Style Inventory include:

1. Noise Level (Quiet or Sound)
2. Light (Low or Bright)
3. Temperature (Cool or Warm)
4. Design (Formal or Informal)
5. Unmotivated/Motivated (Desire to achieve academically)
6. Not Persistent/Persistent (Inclination to complete a task or take breaks)
7. Irresponsible/Responsible (Desire to do what they think they ought to do)
8. Structure (Wants structure or Does not want it)
9. Learning Alone/Peer Oriented Learner
10. Authority Figures Present
11. Prefers Learning in Several Ways
12. Auditory Preferences
13. Visual Preferences
14. Tactile Preferences
15. Kinesthetic Preferences
16. Requires Intake (Likes to eat, drink, chew, or bite objects)

17. Functions Best in the Evening/Morning

18. Functions Best in Late Morning

19. Functions Best in Afternoon

20. Mobility (How long can the person sit)

21. Parent Figure Motivated

22. Teacher Motivated" (Dunn, Dunn, and Price, 1989, pp. 6-9)

Gifted underachievers may find that their "learning style may be inconsistent with teaching methods being used" (Compton, 1982, p. 24).

Anthony F. Gregorc saw learning style from a psychological model. He "began with the question, How and why does the human mind work?" (Butler, 1984, p. 5) This approach was an extension of the perceptual model which sought to understand "the individual’s fundamental consciousness - his or her essence and driving forces - the essential self" (p. 5). Gregorc’s theory was based on the assumption that "every mind has an overarching set of natural qualities designed to promote the individual’s relationship with self and the world, thus to realize - be aware of - and to actualize - act upon - one’s driving forces" (p. 6). In Gregorc’s Energic Model of Style he defined styles as "symptoms of underlying psychological frames of reference and of driving mental qualities of the
mind" (p. 6). He saw individuals as having differences in mediation abilities which included perception, ordering, processing, and relating (p. 7). These mediation abilities were combined into two sets - abstract/concrete and sequential/random - which developed into four types of transaction ability channels: concrete sequential, abstract sequential, abstract random, and concrete random.

The individuals who characterize these channels were delineated as follows:

"Concrete Sequential - practical, predictable, to-the-point organized, and structured

"Abstract Sequential - intellectual, logical, conceptual, rational, and studious

"Abstract Random - emotional, interpretive, sensitive, holistic, and thematic

"Concrete Random - original, experimental, investigative, option oriented, and risk taking" (p. 12)

Harris and Bell (1990) explained the four classifications of P. Honey and A. Mumford in their Manual of Learning Styles (1982) which included activist, pragmatist, reflector, and theorist, by distinguishing when these students learn best.

"Activists learn best when:
- there are new experiences, problems, and opportunities
- they become engrossed in the 'here and now'
- there is excitement and things change rapidly
- they lead the learning activities
- they are given freedom in their learning
- there are set challenges
"Reflectors learn best when:
- they are encouraged to observe and think about activities
- they can take a 'back seat' role
- they are given time to reflect and consider
- they work in a detailed and painstaking way
- learning experiences are well structured

"Theorists learn best when:
- they can organize learning within a personal system or model
- there is time for methodical exploration of ideas and situations
- they have a chance to question and probe
- they are intellectually stretched
- learning is structured with clear aims
- learning appears logical and rational
- they think first, analyze and then generalize
- they are required to understand

"Pragmatists learn best when:
- there appears to be immediate relevance to the learning
- learning is practically based
- they can practice and apply learning
- they can copy or emulate a model or theory"

Other approaches to learning style include that of David Hunt (1981) which looked at "the amount of structure needed for an individual to learn" and relied on teacher observations "as the primary source of diagnostic data" for early elementary school children. Richardson, Eysenck, and Piper (1987) stated that "...the effects of teaching characteristics are filtered through the student’s idiosyncratic perceptions of meaning and relevance" and "these perceptions are a product of the student’s previous academic and personal history, as well as of intellectual and personality characteristics" (p. 24). Witkin and
associates based learning style on the "extent to which the surrounding organized field influenced an observer's perception of an item within it" (Guild and Garger, 1985, p. 28).

Self-Concept

"Open people are free to devote their energies to what is positive and constructive. They can and do set more realistic goals for themselves. Their level of aspirations are more likely to be in line with their capacities. They are more likely to achieve their goals because those goals are more realistic.

"Openness to experience and acceptance refer not only to acceptance of events outside the person's self but equally to the individual's perceptions of self. The adequate person is less defensive and does not bar from perceptual organization what is true about self.

"The accurate, realistic assessment of self resulting from acceptance makes possible the use of self as a dependable, trustworthy instrument for achieving one's purposes" (Combs, 1962, pp. 118-119).

Rational-Emotive therapists discussed self-concept as a rating scale. "People rate themselves as 'good' or 'bad' on the basis of performance" (Corey, 1981, p. 321). LaBenne and Greene (1969) stated "one infers the nature of self-concept from observable behavior over a period of time" (p. 11).

The idea of "perceived evaluations" was consistent with the strategic therapist's concept of "conceptual framework" (Becvar and Becvar, 1988). "A conceptual framework is defined as a world view, or a set of assumptions about the world according to which similarities and differences are punctuated. A conceptual framework provides definitions of
what is called problematic. Further, once a problem is defined as a problem by a conceptual framework, that framework also suggests certain ways of dealing with the problem; that is, possible solutions to a problem are limited to those that are logically consistent with the framework" (p. 212).

"Social learning theory defines negative self-concepts in terms of proneness to devalue oneself and positive self-concepts as a tendency to judge oneself favorably. Because competencies and evaluative standards vary for different activities, performances in dissimilar areas (e.g. social, intellectual, vocational, and athletic) are likely to produce different self-evaluations. Individuals may, for example regard themselves highly in their vocational specialty, moderately positive in social relationships, and negatively in athletic pursuits. A person's self-conceptions may vary even for different aspects of the same sphere of activities. For this reason, measures of self-evaluation in particular areas of functioning are more meaningful than is a conglomerate index" (Bandura, 1977, p. 139).

Academic Self-Concept

"When children enter kindergarten, they do not arrive as simplified personalities with singular attitudes, ideals, feelings, and traits. Instead they arrive in a malleable state which is the result of many past experiences" (LaBenna and Green, 1969, p. 22).

Although children have begun to establish a self-concept upon entering school they are still in developmental stages (p. 23). In the classroom as elsewhere "self-concept depends upon two factors: 1. how people perceive they are
judged by significant others and 2. a comparison of these judgments against a standard that they hold on how they should behave" (p. 43).

According to Silvernail (1985) for many students the trend is to acquire more negative than positive self-images throughout school, "a trend which continues into the upper grades" (p. 16). Silvernail also indicated that "intelligent underachieving high school male students have more negative self-concepts than students of equal intelligence who are achieving at their ability levels" (p. 17). In addition students' perceptions of how their teachers feel about them was highly correlated with self-perception (p. 21).

Brookover (1964) stated that "Self-concept is developed through interaction with significant others which in turn influences behavior. When applied to the specific school learning situation, a relevant aspect of self-concept is the person's conception of his own ability to learn the accepted types of academic behavior; performance in terms of school achievement is the relevant behavior influenced" (p. 271). The study which Brookover undertook focused on "self-concept of ability in school and academic achievement" (p. 271). His study of 1050 seventh grade students in an urban school system concluded that "There was a significant and positive correlation between self-concept and performance in the
academic role" and that "Self-concept was significantly and positively correlated with the perceived evaluations that significant others, defined here as mother, father, teacher, and peer, hold of the student" (p. 278).

With regard to ethnicity and student self-concept, Silvernail (1985) indicated that most of the findings were inconclusive. This author theorized that this inconclusiveness may be due to "confusion over definitions" in self-concept measures.

With regard to tracking, Silvernail concluded that students in higher tracks have higher academic self-concepts which was often reflected in teacher attitudes and perceptions of their students as well as their interactions with them (p. 24).

Summary

Studies have been done matching learning styles and teaching styles or comparing learning styles to academic achievement (Dunn, 1986, Dunn and Dunn, 1978). In one study comparing learning style with self-concept in which "321 students grades three, six, and seven from twelve different schools took the Learning Style Inventory and Gordon’s How I See Myself Scale, the following conclusions were drawn (Price, 1978):

"Overall, eight learning style variables were found that discriminated significantly between the subjects who had a high self-concept and subjects who
had a low self concept. Based on this analysis, individuals having a high self-concept preferred quiet, liked to study in a warm temperature, were adult- and teacher-motivated, were persistent, preferred to learn in several ways, namely by self or with peers, did not have auditory preferences, and did not need mobility. In general, individuals having a low self-concept preferred to study in a cool, noisy environment, were not adult- or teacher-motivated, not persistent, preferred not to learn in several ways, had auditory preferences, and showed a need for mobility" (p. 397).

Researchers have also compared self-concept to achievement (Li, 1988, Supplee, 1989). However, a computer search of literature which showed a relationship among all three components, learning styles, self-concept, and academic achievement at any level turned up little research containing all three components. This may be because certain learning styles coupled with a high self-concept appeared to yield academic success.

When students identify themselves as underachievers, they act consistently within that conceptual framework. Underachievers do not do their homework, do not participate in classroom activities, and have poor peer relationships. For the strategic therapist "Clients are limited in two ways. In the first place they are limited to the conscious mind and to the rational solutions which arise within the boundaries of the framework of concepts and constructs through which they experience meaning. In the second place, they are limited by the fact that they do not have access to alternative frameworks" (Becvar and Becvar, 1988, p. 212).
A study exploring the relationship among learning styles, self-concept and academic achievement can be used to provide a profile of the student for the counselor. This profile may be used by the counselor to assist the student to improve academic self-concept, understand his/her learning style and adapt it to the educational system, or a combination of both of these to increase academic achievement.

"The more we can know and understand the complex child, the more effective and efficient will be the teaching and learning process. We know people think and act differently, yet that fact becomes lost in the education process" (Reiff, p. 5).
CHAPTER III

METHODS

Introduction

Chapter III describes the research methods utilized in this study including: Problem Statement, Design of the Study, Research Questions, Population, Sample, Limitations, Instrumentation, Procedures, Data Analyses, and Conclusion.

Problem Statement

The purpose of this study was to determine a relationship among learning style, academic self-concept, and academic achievement for gifted students and to identify and study an individual who was representative of these results and determine what life experiences have affected this student's underachievement.

Design of the Study

The study was divided into both a quantitative and a qualitative portion. The quantitative portion was to help the researcher to determine the significance of the relationship among the variables studied, to determine the significance of those results and to draw inferences from these results for the population sampled (Kerlinger, 1986, p. 175).

The qualitative portion of the study was done to understand one underachieving gifted student's experience in order to derive an explanation for his underachievement not
obtainable through the quantitative data (Miles and Huberman, 1988, p. 15). Glaser and Strauss (1967) looked at quantitative and qualitative data as "the plausible interpretation versus genuine verification" (p. 13). Because the researcher was looking for this verification, the case study was included.

Research Questions

In order to determine if there was a relationship among learning style, academic self-concept and academic achievement and to identify an individual for the ethnographic study, who seemed to display representative qualities with regard to these variables, the following questions were asked:

1. Will gifted students who have Learning Profile I have higher achievement grades independent of academic self-concept than gifted students who have Learning Profile II?

2. Will gifted students who are in the upper 50th percentile in academic self-concept on a Student Attitude Measure have significantly higher achievement grades than gifted students in the lower 50th percentile in academic self-concept independent of learning style?

3. Is there a difference in grades as a function of the interaction between Learning Profile and academic self-concept? Will this difference hold across gender?
In the Case Study portion of the research, the following questions were explored from the viewpoint of further information to explain the inventory results:

1. What are the characteristics of the student’s family system?

2. What behaviors both academic and social are displayed in the classroom?

3. What are the student’s study habits at home not delineated by the inventories?

4. How might the student’s peer relationships be described?

5. What types of goals does the student have?

Population

The research was conducted at a suburban high school in northern Virginia using an already identified population of ninety-three gifted students in grades nine through twelve. All of these students had been screened and a profile developed for the gifted education program which included teacher evaluation forms, the Cognitive Abilities Test, standardized test data from within the previous two years including the Iowa Test of Basic Skills, academic grades, and the Renzulli-Hartman Rating Scale. In addition, selection may have also been based on strong teacher recommendations. Special circumstances such as socioeconomic status in relation to the family’s academic
expectations, family mobility when standardized testing was not available for the children, and ethnicity were taken into consideration. This placement was made on a case by case basis and was done by the gifted education screening committee.

Selection was made according to the Commonwealth of Virginia guidelines mandated by Article III of the Virginia Constitution. These students were identified in the Gifted Education Program Information Handout as "those students whose abilities and potential for accomplishment are so outstanding that they require special educational programs to meet their educational needs" (p. 3).

The school was located in a metropolitan area in which the federal government accounted for approximately seventy percent of the employment. Approximately fifty-one percent of the graduates entered a post-secondary four-year college program and another twenty-seven percent entered a two-year program. The school population included approximately 1500 students in a county which in 1990 had an estimated population of 230,000. The minority population in the school at the time of the study was approximately 23.8 percent consisting of Blacks, Hispanics, American Indians and Asians (County Profile, 1991). The minority population in the gifted program that participated in the research at this high school was approximately twelve percent. A survey
taken in 1985 indicated that approximately sixty-five percent of the parents completed some form of post-secondary education (State Report, 1990).

The faculty population at this high school included approximately 100 members dedicated to excellence in education including one gifted education coordinator who worked individually as well as in seminars with the identified gifted students.

Sample

Ninety-three students in the Gifted Education Program were sent letters explaining the research and requesting permission for testing. Seventy-four permission letters were returned establishing the sample size. The participants in this study had been placed in the Gifted Education Program according to the criteria outlined previously. The only exception to this selection process was a high functioning student who experienced test anxiety. Determination for placement in the gifted program in this circumstance was made by a panel of the gifted education staff and was based on overall performance, psychological reports regarding test anxiety, and teacher recommendations.

The students were selected for the testing on the basis of permission forms which were completed by the parents.

The achievement grades utilized were those from the end of the 1991-92 school year in the areas of mathematics,
science, English, and social studies and were not weighted. The group composition for testing is shown in Table 1.

Limitations

Since the population was limited to one suburban Virginia high school, the results are generalizable only to this study or schools with very similar populations. The conclusions inferred were based solely on the students' responses to the School Attitude Measure by Wick (1991) and the Learning Style Inventory by Dunn, Dunn, and Price (1989) and the comparison of these measures with achievement as determined by academic grades along with the observations made in the classroom and the individual interviews with the student selected for the case study, his parent, and teachers.

Instrumentation

Two instruments were used in this research. The first was the School Attitude Measure, a self-report survey instrument designed with the "underlying assumption that the thoughts, feelings, interests, and attitudes composing those affective characteristics associated with academic learning and school behavior are interrelated and multidimensional in nature," (Wick, 1990, p. 2). The second, the Learning Style Inventory, was a self-report "instrument which is concerned with the patterns through which learning occurs. It summarizes the environmental, emotional, sociological, and
Table 1
Composition of the Sample

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<th>Female</th>
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<tr>
<td>12</td>
<td>13</td>
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<td>17</td>
</tr>
<tr>
<td>Total</td>
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<td>27</td>
<td>74</td>
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The minority breakdown was as follows:

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<th>Grade</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
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<tbody>
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</tr>
<tr>
<td>Total</td>
<td>1 2 1</td>
<td>3 0 2</td>
<td>9</td>
</tr>
</tbody>
</table>

The sample contained twelve percent minority students.
physical preferences a student has for learning — not why they exist" (Dunn, Dunn, and Price, 1989, p. 6).

The School Attitude Measure (SAM) provided information on five attitudinal scales: "Motivation for Schooling, Academic Self-Concept — Performance Based, Academic Self-Concept — Reference Based, Student’s Sense of Control over Performance, and Student’s Instructional Mastery" (Wick, p. 1). This research focused on the two measures which were described as follows, Academic Self-concept — Performance Based and Academic Self-Concept — Reference Based, using the research premise that academic self-concept was a key component in achievement when intelligence was held constant regardless of the learning style profile:

"Scale 2: Academic Self-Concept — Performance Based (SCPef) — Assesses the students' confidence in their academic abilities and their feelings about their school performance.

"Scale 3: Academic Self-Concept — Reference Based (SC Ref) — Assesses how students think other people feel about the students' school performance and ability to succeed academically" (p. 1).

Academic self-concept "has been found to be positively correlated with achievement even when the effects of intelligence and socioeconomic status are statistically eliminated" (Brookover, et al., 1964, p. 271).

The sample design for the SAM was "a deeply stratified, multi-stage national probability sample of kindergarten to twelfth-grade students in public schools (excluding schools
in districts with enrollments less than 300) and in parochial schools" (Wick, p. 8). The stratification was based on school district sizes, geographic regions, and levels of socioeconomic status. The technical manual indicated that "the items have a consistently high face validity for each scale" (p. 42). The authors indicated that this "test has construct validity to the extent that it adequately captures the theoretical construct or trial being measured" (p. 43). "The median reliabilities for the SAM Total are both at or above .90 and the correlations between SAM Total and Reading Total for grades 1 through 12 range from 0.02 at grade 3 to 0.32 in grades 9 and 10" (p. 43). The authors noted that "The median scale reliability is .83 while the median scale intercorrelation is .56. This substantial difference provided construct validation that the scales were not simply renamed aggregates all measuring the same concept" (p. 43).

The Learning Style Inventory (LSI) "identified conditions under which an individual is most likely to learn, remember, and achieve" (Dunn, et al., 1989, p. 5). The LSI identified how students prefer to "function, learn, concentrate, and perform during educational activities in the following areas:

1. Environment (Sound, Temperature, Light, and Design)
2. Emotionality (Motivation, Responsibility, Persistence and the need for either Structure or Flexibility)

3. Sociological Needs (Learning Alone, with Peers, with Adults and/or in Several Ways)


Eight measures, from the twenty-two categories in the LSI, were identified by Price (1978) as those which have a significant positive relationship to academic achievement when comparing learning style with self-concept. Dunn (1983) also identified these categories as significant in determining learning styles of exceptional children. These eight measures were used for this study to identify the Learning Profile I:

1. Sound (Noise level)
2. Parent Motivated
3. Teacher Motivated
4. Persistence
5. Auditory
6. Learning Preference
7. Temperature
8. Mobility

There was no theoretical or empirical data which indicated that using this selective scale would impact the validity of the instrument.

"Research in 1988 indicated that 95 percent (21 out of
22) of the reliabilities are equal to or greater than .60 for the Likert scale English translation in grades 5 through 12. The area with the highest reliabilities include: noise level, light, temperature, design, motivation, persistence, responsibility, structure, learning alone/peer oriented learner, authority figures present, learn in several ways, auditory, visual, tactile, kinesthetic preferences, requires intake, evening/morning, afternoon, needs mobility, parent figure motivated, and teacher motivated" (p. 30).

The face validity, "although not validity in the technical sense... is a desirable feature of tests" (Anastasi, 1982, p. 136). The LSI which had been used in studies which match learning styles with teaching styles (Dunn and Dunn, 1978) appeared to have good face validity because of its functioning in practical situations.

Using the research by Price (1978) which indicated that students who had a high self-concept generally had a specific learning style from the eight measures identified previously, and those with a low-self concept had another, two learning style profiles were developed:

Learning Profile I included the students who had strong preferences for a quiet, warm learning environment. They were motivated by parents and teachers and were persistent, requiring little supervision or assistance. In addition, they preferred to study in a variety of ways which might
include working alone, with peers or with adults, but showed no preference for auditory learning which could include the use of tapes, videotapes, or oral directions. When studying these students choose to remain in one place rather than to move to different locations.

Learning Profile II was any other combination of preferences on the LSI in the categories of Sound, Motivation, Persistence, Auditory, Learning Preference, Temperature and Mobility than those listed in Learning Profile I.

The scale for each category ranged from 20 to 80. Scores from 60 to 80 were considered to be a strong preference. The scales for Auditory learning and Mobility were inverted so they could be totaled with the other six variables to achieve a total Learning Profile.

Procedures

Permission for testing was obtained first through the county School Administration's Testing Office and then through the high school building principal. In addition permission letters were sent to the parents of all ninety-three students in the Gifted and Talented Program at the high school from grades nine through twelve (Appendix A). A parent meeting was held explaining the proposed research during which parents were given the opportunity to ask questions about the research.
Seventy-four students who had been identified and placed in the Gifted and Talented Program at this high school and who had parental permission were included in the study.

Quantitative Data Collection

The testing was done in two morning sessions in the high school cafeteria because of the availability of space. Students were given a choice of the two sessions to lessen the impact upon their class work. Both the Student Attitude Measure and the Learning Style Inventory were untimed instruments. They were administered back to back with the total testing time approximating one hour. All students were given as much time as they needed, however, to complete the inventories. Those students who were unable to complete during the time that the test site was available were accommodated in the counselor's office.

The results of the quantitative portion of the study were distributed to the participants in the gifted education seminars at which time a discussion of the results and their usefulness for the students with regard to their studies was held. Questions pertaining to the two inventories were also answered. For those students who had graduated or had moved, the results were sent to the homes with an explanation and an invitation to discuss them with the researcher (Appendix A).
Qualitative Data Collection

The comparisons of learning style, total academic self-concept both performance- and reference-based, with academic achievement, yielded statistics which were used to determine the selection of an underachieving student for the case study. Underachievement was defined, as previously written, receiving a "C" or lower in at least one of the academic classes which included English, mathematics, science, and social studies (Green, et al., 1988) excluding the elective classes.

For the case study portion of the research, after receiving written permission from the parent, an initial interview with the selected student was conducted. This interview included questions regarding personal assessment of oral and written work, completion of daily assignments, personal satisfaction with accomplishments, concentration, goal setting, and peer relationships. Interviews with three classroom teachers, one math, one social studies, and one gifted education, were done to determine consistency with the self-reported information and to provide additional information which they could offer regarding the student's classroom behaviors. A fifth interview was conducted with the student's mother who was able to give additional information about the family and confirm information which was given by the student.
Two classroom observations were made, one in a science classroom and one in an English classroom, to observe peer interactions, classroom participation, and concentration. After the classroom observations were complete, a second interview was conducted with the student which focused on classroom participation, aggressive/non-aggressive behaviors, group functioning, concentration, and goal setting.

These interviews and observations occurred over a one month period to accommodate the teachers, the student and the parent and also to allow the researcher to review the information obtained from the interviews and observations to determine the questions for the post-observation interview with the student.

After an initial case study was written, the manuscript was given to the student who was observed and interviewed to review. His comments were then included in the text of the final case study.

Data Analyses

A comparison was made of the results of the School Attitude Measure and the Learning Style Inventory in relationship to the unweighted academic achievement grades for the school year which ended in June, 1992.

The statistical results were compiled and analyzed using the SYSTAT statistical computer package. A Pearson
Correlation Matrix was run using all the variables from both the SAM and the LSI. Multiple regression was used as the statistical analysis procedure because "Multiple regression analysis is a method for studying the effects and the magnitudes of the effects of more than one independent variable on one dependent variable using principles of correlation and regression" (Kerlinger, 1986, p. 527) ... when "continuous and categorical variables are used together" (p. 558).

The dependent variable in this research was Grade Point Average. The independent variable which was not obtained through the testing was Sex. The independent variables from the Learning Style Inventory included Noise Level, Temperature, Not Persistent/Persistent, Prefers Learning in Several Ways, Auditory Preferences, Mobility, Parent Figure Motivated, and Teacher Motivated. These were compiled into Learning Style Profiles I and II (LSICAT). The independent variables from the Student Attitude Measure included Academic Self-Concept - Performance Based, and Academic Self-Concept - Reference Based which were compiled categorically into a Total Academic Self-Concept High and Low (ASCCATT).

The following is the list of abbreviations used throughout this research:
1. ID - Student Identification Number
2. SX - Sex as a dummy variable
3. AVERGRAD - Grade Point Average
7. QUIET - Noise Level
8. TEMP - Temperature
9. PERSIST - Not Persistent/Persistent
10. SEVWAYS - Preferred Learning in Several Ways
11. PARENT - Parent Figure Motivated
12. TEACHER - Teacher Motivated
13. NOAUDIT - No Auditory Preference
14. NOMOBILE - No Mobility Preference
15. LSITOTAL - Included the total Learning Profile
16. LSICAT - Learning Profiles I and II
17. ASCPERF - Academic Self-Concept Performance Based
18. ASCREF - Academic Self-Concept Reference Based
19. ASCTOTAL - Combined score of ASCPERF and ASCREF
20. ASCCATT - Academic Self-Concept High and Low

Correlations were run to determine relationships among the variables and to obtain estimates of the direction and degree of those relationships.

This study was a quasi-experimental design which began with alternative hypotheses. The quantitative portion of the study was to confirm or deny these hypotheses found in the research questions.

Multiple regression was used to determine the strength
of the relationships among grade point average and the Learning Profiles I and II as well as the Academic Self-Concepts High and Low. The result was a statement of the functional relationship of the dependent variable with the independent variables (Schroeder, Sjoquist, and Stephan, 1988, p. 11).

Because "the independent variables (in regression analysis) are continuous variables, they can assume an infinite number of values...Dummy independent variables, also called categorical or binary variables, are employed in regression taking on the values of one or two" (Schroeder, et al., p. 56). In this research a dummy variable was set up for sex. Sex was given the values of 1 for boys and 2 for girls.

The sample was drawn across grade levels because the researcher was looking for all cases that would meet the set criteria. Despite the fact that it was drawn across grade levels, there was no theoretical or empirical data to support the use of grade level as a variable.

Because of the small representation of minority students in this study and in the interest of maintaining the maximum number in the sample, the researcher did not use ethnicity as a variable.

The qualitative data took a structured approach using interview questions and observation objectives. The purpose
of the qualitative study was to investigate one individual who had been selected through the quantitative portion of the study as one whose results were representative of the results of the quantitative study. The framework from which the research began was as follows: First, an individual who was representative of the characteristics for an underachiever identified in the quantitative research was selected; and, second, a positive relationship was assumed to exist between the results of the academic self-concept and academic achievement as determined from correlation studies.

The interview questions were developed to cover the topics which the research indicated were pertinent to academic success including quality of oral and written work, completion of daily school work, satisfaction with accomplishments, self-image, aggressive behaviors, group functioning, interest in new activities, concentration, goal setting, peer relationships, attitude toward school, and family structure. The observations were designed to verify the information obtained in the interviews and gain insight into how these behaviors were displayed in the classroom.

In order to cover all academic areas, interviews were done with an American history and mathematics teacher and observations were conducted in the English and science classrooms. An additional interview was conducted with the
gifted education teacher since she had worked with this student for his entire high school career. The pre- and post-observation interviews were conducted with the student to gather and verify information indicated above. The parent interview was conducted to confirm the information from the student and gather further insight into the questions posed regarding the academic self-concept and the academic achievement.

**Threats to Internal Validity**

Because the study had a quasi-experimental design, having no treatment portion, threats to internal validity which included history (events occurring outside the experimental setting), maturation (time between testing), instrumentation, statistical regression, selection of subjects (with regard to placement in groups) and mortality were not issues in the quantitative portion (Tuckman, 1978).

However, because the testing portion of the study was done at the end of one school year and the interviews and observations at the beginning of the next, the affect of history on the student selected for the case study and on the teachers he had from the previous school year who were interviewed had to be considered.

**Threats to External Validity**

The extent to which a study has external validity is the extent to which the results can be generalizable to
other populations (Tuckman, 1978). In this quasi-experimental study external validity was threatened in the following ways:

1. Use of an Experimentally Accessible Population (p. 258) - The students who participated in this study were first selected from the gifted and talented population of the high school. They were further self-selected as a result of obtaining parental permission for the testing.

The individual selected for the qualitative portion of the study has to be considered on an individual basis because his circumstances were unique. The information garnished from this portion of the study would not be generalizable.

2. Inappropriate Choice of Measuring Instrument (p. 232) - The Student Attitude Measure and the Learning Style Inventory are both self-report instruments. Factors which may affect the responses, such as time of day, fatigue, or personal crises, were not taken into consideration. These could be considered, however, in the qualitative portion of the study.

3. Hawthorne Effect - (p. 265) The simple knowledge that a student is participating in a study may have an affect on the responses made by that individual. This was a particular threat in the qualitative portion of the study.
Conclusion

Underachieving gifted students often seem to be a contrast in terms. On the one hand the students have a high ability and on the other they are performing below expected levels. But the nature of achievement is complex and subjective.

This study was designed to take into consideration both the complexity and subjectivity of this contrast by first identifying the variables which correlate highly with academic achievement, then identifying a student whose profile was that of an underachiever. An in-depth study of this individual revealed information which, although pertinent only to that one person, may help in the understanding the complexity of academic achievement.
CHAPTER IV

RESULTS

Introduction

This chapter presents the results of the research described in Chapter III. First the statistical results are presented along with information on the selection of the student to be studied in the qualitative portion. Second, a case study of this individual is provided which includes both the interview and observation portions of the research.

Type of Study

The quantitative research was done in a quasi-experimental design which included selecting the sample, collecting and tabulating data through the SYSTAT program, and testing the hypotheses. The qualitative portion was a structured case study which involved selecting an individual for the case study based on the quantitative data and observing this individual in selected natural settings. In addition interviews with the student, three of his teachers and his mother were conducted.

Statistical Analyses

A Pearson Correlation Matrix was run to determine the linearity of the relationship of academic achievement based on the average of the year-end grades in math, science, English, and social studies, without weighting, to the independent variables of learning style and academic self-
concept.

The results of the correlation studies for Learning Profile I, designated LSICAT, and its component parts (Noise, Temperature, Persistence, Several ways to learn, No auditory preference, No mobility preference, Parent motivated and Teacher motivated) with Academic achievement are in Table 2. As evident from the table, Persistence and Parent motivation had a significant positive linear relationship with academic achievement.

The results of correlations for the Academic self-concept performance based, Academic self-concept reference based, and the combined score of performance and reference based academic self-concept with academic achievement are shown in Table 3. As evident from the table, both academic self-concept reference-based and performance-based have a significant positive linear relationship with academic achievement.

Because the quasi-experiment was conducted to determine the effects of two different learning profiles, high and low academic self-concept, sex, and the interaction of academic self-concept and learning style on academic achievement, a multiple regression analysis was run setting the significance level at p=0.05 using the following model:

\[ \text{AVERGRAD}=\text{CONSTANT}+\text{ASCCATT}+\text{LSICAT}+\text{SX}+\text{INTER} \]
Table 2

Pearson Correlation of Academic Achievement with Learning Style

<table>
<thead>
<tr>
<th>Variable</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>QUIET (Noise level)</td>
<td>-0.010</td>
</tr>
<tr>
<td>TEMP (Temperature)</td>
<td>-0.045</td>
</tr>
<tr>
<td>PERSIST (Persistence)</td>
<td>0.458*</td>
</tr>
<tr>
<td>SEVWAYS (Several Ways to Learn)</td>
<td>0.120</td>
</tr>
<tr>
<td>NOAUDIT (No Auditory Preference)</td>
<td>-0.075</td>
</tr>
<tr>
<td>NOMOBILE (No Mobility Preference)</td>
<td>-0.068</td>
</tr>
<tr>
<td>PARENT (Parent Motivated)</td>
<td>0.379**</td>
</tr>
<tr>
<td>TEACHER (Teacher Motivated)</td>
<td>0.359</td>
</tr>
<tr>
<td>TOTALLSI (Total Learning Style, Continuous Data)</td>
<td>0.336</td>
</tr>
<tr>
<td>LSICAT (Total Learning Style, Categorical Data)</td>
<td>0.241</td>
</tr>
</tbody>
</table>

* p < .01

** p < .05
Table 3

Pearson Correlation of Academic Achievement with Academic Self-Concept

<table>
<thead>
<tr>
<th>Measure</th>
<th>Correlation Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCPERF</td>
<td>0.548*</td>
</tr>
<tr>
<td>(Academic Self-Concept Performance-Based)</td>
<td></td>
</tr>
<tr>
<td>ASCREF</td>
<td>0.633*</td>
</tr>
<tr>
<td>(Academic Self-Concept Reference-Based)</td>
<td></td>
</tr>
<tr>
<td>ASCTOTAL</td>
<td>0.575*</td>
</tr>
<tr>
<td>(Academic Self-Concept Total, Continuous Data)</td>
<td></td>
</tr>
<tr>
<td>ASCCATT</td>
<td>0.336*</td>
</tr>
<tr>
<td>(Academic Self-Concept Total, Categorical Data)</td>
<td></td>
</tr>
</tbody>
</table>

* p < .01
where:

\[
\begin{align*}
\text{AVERGRAD} & = \text{Academic Achievement} \\
\text{ASCCATT} & = \text{Academic Self-Concept (High and Low)} \\
\text{LSICAT} & = \text{Learning Profiles I and II} \\
\text{SX} & = \text{Sex} \\
\text{INTER} & = \text{Interaction between Academic Self-Concept and Learning Profile}
\end{align*}
\]

The results of the multiple regression analysis are in Table 4. These results indicated no significant interaction (p=0.08) and no significant main effects for Learning Profile (p=0.055) or sex (p=0.137) but a significant main effect for academic self-concept (p=0.01). However, since 0.055 and 0.08 were not so far away from the .05 significance level set and because of the error introduced by categorizing the Learning Profile and Academic Self-Concept data, both the main effects for Learning Profile and the Interaction were interpreted as significant.

The statistics were run for academic achievement (AVERGRAD) yielding the 2X2 factorial design shown in Table 5. A graphic representation of the interaction between learning style and academic self-concept predicting academic achievement is shown in Figure 1.

Quantitative Research Questions

In order to determine the relationship among Learning Style, Academic Self-Concept, and Academic Achievement the
Table 4

Multiple Regression Analysis

DEP VAR: AVERGRAD  N: 74  MULTIPLE R: .484
SQUARED MULTIPLE R: .234  ADJUSTED SQUARED MULTIPLE R: .190

STANDARD ERROR OF ESTIMATE: 0.566

<table>
<thead>
<tr>
<th>VAR</th>
<th>COEF</th>
<th>STD ERROR</th>
<th>STD</th>
<th>TOLERANCE</th>
<th>T</th>
<th>P (2 TAIL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONST</td>
<td>-0.985</td>
<td>1.474</td>
<td>0.000</td>
<td></td>
<td>-0.669</td>
<td>0.506</td>
</tr>
<tr>
<td>ASCCAT</td>
<td>1.974</td>
<td>0.748</td>
<td>0.981</td>
<td>0.0804151</td>
<td>2.640</td>
<td>0.010</td>
</tr>
<tr>
<td>LSICAT</td>
<td>2.398</td>
<td>1.229</td>
<td>1.676</td>
<td>0.0150329</td>
<td>1.950</td>
<td>0.055</td>
</tr>
<tr>
<td>SX</td>
<td>0.221</td>
<td>0.147</td>
<td>0.170</td>
<td>0.8693244</td>
<td>1.504</td>
<td>0.137</td>
</tr>
<tr>
<td>INTER</td>
<td>-1.127</td>
<td>0.633</td>
<td>-1.724</td>
<td>0.0118243</td>
<td>-1.780</td>
<td>0.080</td>
</tr>
</tbody>
</table>

Analysis of Variance

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>SUM-OF-SQUARES</th>
<th>DF</th>
<th>MEAN-SQUARE</th>
<th>F-RATIO</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>REGRESSION</td>
<td>6.768</td>
<td>4</td>
<td>1.692</td>
<td>5.273</td>
<td>0.001</td>
</tr>
<tr>
<td>RESIDUAL</td>
<td>22.140</td>
<td>69</td>
<td>0.321</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 5
Mean Academic Achievement by Academic Self-Concept and Learning Profile

<table>
<thead>
<tr>
<th>Learning Profile</th>
<th>Academic Self-Concept</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2.543</td>
<td>3.386</td>
</tr>
<tr>
<td>II</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td></td>
<td>3.750</td>
<td>3.617</td>
</tr>
</tbody>
</table>
Figure 1
A Graphic Representation of the Interaction of Learning Style and Academic Self-Concept Jointly Predicting Academic Achievement
following questions were asked:

1. Will gifted students who have Learning Profile I have higher achievement grades independent of academic self-concept than gifted students who have Learning Profile II as measured by the LSI? The null hypothesis for this research question was that there is no difference in academic achievement between gifted students who have Learning Profile I independent of academic self-concept than gifted students who have Learning Profile II as measured by the LSI.

Although it appeared from the means that Learning Profile I does make a difference in academic achievement, the multiple regression results would not allow a rejection of the null hypothesis at a significance level of .05. However, because of the error introduced through categorizing the continuous data obtained on Learning Styles into Profiles I and II, these data were considered significant allowing for the rejection of the null hypothesis because there were only 5.5 chances in 100 that these results would not occur. Therefore, the results would indicate that there was a significant positive relationship between Learning Profile and academic achievement independent of academic self-concept.

2. Will gifted students who are in the upper 50th percentile in academic self-concept on the SAM have
significantly higher achievement grades than gifted students in the lower 50th percentile in academic self-concept independent of learning style? The null hypothesis for this question was that there will be no difference in academic achievement for gifted students who are in the upper 50th percentile in academic self-concept on the SAM than gifted students in the lower 50th percentile independent of learning style.

The multiple regression results would allow a rejection of the null hypothesis at a significance level of .010. This indicated that there was a significant positive linear relationship between academic self-concept and academic achievement independent of learning style.

3. Is there a difference in academic achievement as a function of the interaction between Learning Profile and Academic Self-Concept. Will this difference hold across gender? The null hypothesis was there is no difference in academic achievement as a function of the interaction between Learning Profile and Academic Self-Concept.

The multiple regression study does not allow rejection of the null hypothesis at a significance level of 0.05. However, again because of the introduction of error by categorizing the Learning Style and Academic Self-Concept data, the results were probably an underestimate of the significance of the interaction. Even with these results,
however, there were only 8 times out of 100 that this result occurred by chance. Therefore, the interaction was treated as significant.

The interaction indicated that academic achievement was high when a student had Learning Profile I regardless of Academic Self-Concept. However, when a student had Learning Profile II, if Academic Self-Concept was Low, then academic achievement was also low; and, when Academic Self-Concept was high, then academic achievement was high (Figure 1).

This interaction held for males; but, because there were no females who had low academic self-concept and Learning Profile I, no determination could be made for females regarding the interaction (Table 6, Figure 2).

Criteria for Case Study Selection

Because the Total Academic Self-Concept (ASCTOTAL) correlation with academic achievement (AVERGRAD) was a 0.575 indicating a relatively strong linear relationship between academic self-concept and academic achievement and the multiple regression study allowed prediction that academic self-concept had a positive linear relationship with academic achievement, the students whose academic self-concept scores totaled less than 40 and whose academic achievement was below a 2.5 were considered for the case study.
Table 6

Mean Academic Achievement by Academic Self-Concept and Learning Profile by Sex

**Males**

<table>
<thead>
<tr>
<th>Learning Profile</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>II</td>
<td>2.42</td>
<td>3.303</td>
</tr>
<tr>
<td>I</td>
<td>3.75</td>
<td>3.658</td>
</tr>
</tbody>
</table>

**Females**

<table>
<thead>
<tr>
<th>Learning Profile</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>II</td>
<td>2.850</td>
<td>3.612</td>
</tr>
<tr>
<td>I</td>
<td></td>
<td>3.596</td>
</tr>
</tbody>
</table>
Figure 2

A Graphic Representation of the Interaction of Learning Style and Academic Self-Concept Jointly Predicting Academic Achievement for Males
The following two students met these criteria (Appendix B):

<table>
<thead>
<tr>
<th>Student No.</th>
<th>ASCPERF</th>
<th>ASCREF</th>
<th>ASCTOTAL</th>
<th>AVERGRAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>038</td>
<td>30</td>
<td>06</td>
<td>36</td>
<td>2.0</td>
</tr>
<tr>
<td>045</td>
<td>17</td>
<td>09</td>
<td>26</td>
<td>2.1</td>
</tr>
</tbody>
</table>

The student who had a 0.75 G.P.A. had graduated. This G.P.A. was only for the four academic classes at the end of the 1991-92 school year and was not the cumulative G.P.A.

In addition the student selected had Learning Profile II which, according to the multiple regression analysis as interpreted, coupled with low academic self-concept would predict low academic achievement.

Permission was given by the parent of 038 to conduct interviews and observations.

Case Study Introduction

One of the lingering questions after the quantitative portion of this research was completed, because of the significant correlation between academic self-concept and academic achievement and the interaction between academic self-concept and Learning Profile II, was what came first. Did low academic self-concept precede low grades or the reverse? From this point the researcher could look into the questions of either what preceded the low academic self-concept or what preceded the low academic achievement for this individual. For this reason, a case study was
undertaken of an individual with low academic self-concept, Learning Profile II, and low academic achievement.

This selected student, throughout elementary school and middle school, had maintained all A’s and B’s. In ninth grade he earned all B’s and one C. In tenth grade he earned all A’s and B’s except for one C. In his junior year this young man earned one A in a semester elective course, two B+’s in elective courses, one of which was a semester course, two B’s, two C’s, and one D in academic subjects. On the Student Attitude Measure he had a self-reported score at the thirtieth percentile on academic self-concept performance based and at the sixth percentile on academic self-concept reference based.

Background Information

John, a fictitious name used to protect anonymity, was a 17-year-old male high school senior who always had a smile on his face and dotted his conversation with humorous anecdotes. He was a tall, very thin, well-mannered young man with blond hair which hung carelessly over his ears. He said the other students call him "Stick." He described himself as "tending to stay around by himself with friends and stuff" rather than staying with his family a lot. He said his favorite classes were the "problem-solving ones like math and science."

John was a native of Virginia, born in August, 1975, at
the local hospital which he said with what appeared to be a little regret coupled with an air of uniqueness. He never really left the area except for an occasional vacation. He said he had lived in several different houses but always in the same locale. He spoke laughingly of having suffered through this place.

His mother was born in Baltimore and had travelled all over the country as a child because of her father’s work. John seemed somewhat envious of his mother’s travels. However, she spent her high school years in northern Virginia and had completed her bachelors degree in business in Virginia. Her parents were still living in the Shenandoahs although there was an uneasiness with John’s mother’s relationship with her parents at the time of the interview. She was in counseling dealing with issues regarding her parents when the interview was conducted.

John’s father, who had a high school education, was from a large family in Virginia. John referred to his father’s relatives as country folk mimicking comically their speech patterns. He didn’t feel as though he or his father really fit into that part of the family because he said "Dad’s more suburban than country." He said his dad was closest to his grandmother who had died about a year before. So now there were no relatives left in his father’s family with whom he cared to keep in touch. His father was the
youngest member of his family with the next oldest being 12 years his senior.

John's mother described his father as someone whose job was "to provide home and food and then you know that I love you." She indicated that there was no physical closeness between the children and their father. She also stated that John did not visit his father regularly any more, and this relationship began to diminish about a year ago. John, however, attributed the infrequency of visits to an increase in his own activities and his job, leaving little time for traveling to see his father.

John had a brother four years older who doted on him when he was first born. His mother said John was his baby from the day she walked through the door with him. He fed John, held him, and even spoke for him. Mother said his older brother probably knew what John wanted better than she did since he was always with him.

John established some independence from his brother by age five when he no longer allowed his brother to speak for him. This independence, according to his mother, really hurt his older brother who was satisfied with John's dependence on him.

When John was seven and just completing first grade, his parents divorced. John said he could recall being upset at first but learned to accept the situation. John lived
with his father and brother while mom lived in a nearby apartment. Mother said that the arrangement allowed her and her ex-husband to spend equal amounts of time with the children, and that she and her ex-husband took great pains to make this divorce as easy on the children as possible. She also stated that she felt this forced their father to communicate with the children. She said, although the boys lived with their father, they spent one night a week, every weekend and all summer with her at a minimum.

John’s elementary grades remained A’s and B’s throughout second, third, and fourth grades when he lived with his father and brother.

During this time, John’s mother remarried. She stated that she remained close to her children during the time that the children were not with her although she did not mention this remarriage during the interview.

In the fourth grade, John was tested for and placed in the gifted program at the elementary school. His mother said that he was easily placed in the program whereas she had to fight to get his brother into it when he was in fourth grade and that his brother’s experience with the program had been negative.

John described his initial experience in the program as special. He said, "They took us to another school. There were only four of us on a bus. I guess I felt special."
At the end of the fourth grade, John moved back with his mother and second husband who divorced about a year later. John said nothing about this marriage except that his mom had been married and divorced. This was the first separation between John and his older brother who remained with his father. John simply spoke of these changes by saying that he learned to live with them. There was a demeanor of acceptance of these upheavals in his young life. His brother, however, began a different, more rebellious pattern. He became part of a band, abused substances, and eventually dropped out of high school.

When asked how he avoided the route that his brother took, he said, "Just my choice. I didn’t want anything to do with it. My choice. I don’t give in to peer pressure. That’s one of my big moral things."

John remained close to his brother, not condoning his behaviors, but again accepting him as a person. He said, "I admired my brother for a long time and still respect his opinion," but he did not admire some of his brother’s choices.

In middle school John remained an academically excellent student. He had a close friend who has remained his friend throughout high school. Both of these young men were in the gifted program and applied to a local magnet school for science and technology. John had been reading a
great deal, he reported, about the school from newspaper articles and was looking forward to attending there. John and his friend were placed on the waiting list and were told that all students placed there would be accepted in the fall. However, the attrition rate at the school was not what had been expected, and John and his friend were not placed there.

His mother said John was really anxious to go to this science and technology school; and, when he was not accepted, he was devastated. John reported that he was "mad" that he did not get in because he had been reading a lot about the school, but again he accepted this disappointment. He said, "Disappointment, disappointment. It's just a part of life...accept it." Even when asked if he got angry, John said, "There's angry...but there's angry with accepting. You can be angry and still accept it, but it's not going to change anything."

However, he did not become an integral part of the school that he did attend by joining clubs or activities according to his mother. In fact she reported that he did not even care to have a school t-shirt in ninth grade. He did, however, maintain his grades as he had before except for the addition of one "C" in a foreign language course.

John did not reapply to the magnet school because, he reported, that he would have had to make up a great deal of
work and was unable to attend a summer program due to lack of transportation. John said this again with an air of acceptance.

During his tenth grade year, John continued his academic success again with all "A's" and "B's" with only one "C" again in foreign language. His father had remarried and was living about an hour south of John's home. John's stepmother had a daughter, whom John said he did not like. His older brother was living on his own.

John's mother remarried just prior to his junior year. He now had a stepsister two weeks older than he, who was not in the gifted program, an eleven-year-old brother in the gifted program, who was having difficulty reconciling his mother's death, and a stepfather who was described by John as a nice guy with whom he could live. He was no longer living alone with his mother. When asked if there was any competition between his stepsister and him, he said, "Nah, not really - she has to work for her grades."

About this new living situation, when asked if he felt selfish about sharing his mother, he said, "That doesn't bother me. I'm just indifferent to it...just indifferent. I mean I just don't pay much attention to it...It didn't mean a whole lot to me. That's her life, not my life. We're not that close." His mother stated that she felt John really liked the new living situation. She said, "He enjoys
being the big brother now, kind of playing (his older brother's) role now." He said in this blended family he was looked at as the "responsible child" and, as a result, was expected to do more.

At home John had some chores which he did on Fridays - dusting, mopping floors, and keeping his ferret's cage clean. He was also working about twenty hours per week at a fast food establishment. He had worked in the fall of his junior year, but his mother made him quit because the job was too demanding. "After stomping around the house for a couple days," she said, "he came down and sat on her bed and talked for three hours reading her some poetry that he had been enjoying, never mentioning the job again."

In addition, his older brother moved back in with the family. John said he was still "close" to his brother even though there was a time they did not live together.

John described his family as "there." He said, "At home there's always family there. When I go out, I'm always hearing from my family. Sometimes I like to go out and be away from them." He said he would like to go away to college to get away from the family but, said with a laugh, "I'll probably find some family there, too."

It was during this year that John's grades dropped significantly. He spoke of this year as being an academic disaster. It was at the end of this year that the academic
self-concept profile was done and found to be low.

John was now in his senior year, and his academic achievement was improved according to his first quarter report which were as follows: Science, B; English, A; Social Studies, C+ (Advanced Placement); and Math, B.

He also described himself academically as a nine on a scale from one to ten, in which ten was high, although he said, "Grades are not a true measure of me or of what somebody is capable of." With regard to his junior year, he said, "I would have been a four." He said the difference between the four and the nine was a "realization that time has gone by."

He felt that his mother would think he was a ten as far as capability but a six as far as performance; and that his father would give him a nine over all. (His mother placed his capability at a ten and performance at an eight.) He also felt that his father understood him more than his mother because he "goofed off more as a teenager, and Mom got straight 'A's.'" His mother said that his father would probably have no idea of how John was doing and that "As long as he was doing ok, that's all right."

John thought the difference between his natural brother and him was that his brother "got too bored with stuff too easily and quit. I get bored with stuff, too, but I keep doing it." John's mother thought that John probably traded
off between his academic classes but that his attitude toward achievement was "better balanced than (her own) frankly."

John’s goal was to go on for a bachelors or masters degree in architecture. During his senior year, John reported that he was trying to complete his homework about one hundred percent of the time; whereas, the previous year, he stated, that he did homework about "0.03 percent of the time." In addition, he said that he really liked to study with a lot of light and fairly loud music no matter what subject he was studying so even though there was always noise in the household, he was able to function academically.

When asked how he had been able to deal with some of the situations he had lived through, divorces, remarriages, blended families, he said that he copes with humor. "I help other people cope with a lot of problems...their problems. Humor seems to cheer them up. I'm not a real down person. Humor is just a part of me I guess." When facing a problem that was difficult in life he reflected, "There are some things in this world that you can't do anything about...That's just the way it is."

He said when he was in a stressful situation like at work, sometimes emotions would win over logic, but he said, "I always say I'm sorry."
When asked what he hoped to accomplish in the next five years, he said, "Getting out of (this area) and getting through college."

He described his participation in the classroom as a person with cravings. "You could say do you want something to eat, and I'll say, what is it. It's not if I'm hungry; it's what the food is. It's not a matter of whether I want to do something. It's what you're offering me to do...But if I'm not doing it, I'll sit there and critique others."

John saw himself as aggressive because, he said, "I don't settle for things...like I said I accept things and that sounds like a contradiction, but I don't like to settle for things. If you gave me one thing, then I'm going to work for something else, but at the same time, I'll accept when it's not changeable...I guess I consider myself aggressive because I'll struggle for or I'll work hard for things...not that my academic record shows that but that gets back to the importance of school."

He also did not see himself as popular but said to be popular one needed to be part of a clique. He said, "I am my own clique."

He reported that if something really bothered him, he worked through the problem by himself. "I'm sort of private. My problems are mine. Other people come to me with their problems...I think that's 'cause I always try to
understand their problems." With regard to his family, he said, "I guess they'd be there for me, but I don't ask them to be. I don't accept help from other people."

When asked what positive word described him, he said "determined." He had a great deal of difficulty thinking of a negative word. Finally, when he did think of a negative word for himself, it was "impatient." "I'm pretty patient about some things, you know...If I feel as though I have any control over it no matter how slight or obscure, I'll be impatient."

He said, "I have a high opinion of myself." He stated that his academic self-concept was low because "I wasn't doing as well as I could, but I didn't care."

John felt that simply a lack of interest made his academic achievement falter. "School just doesn't interest me...it's not practical to me."

Teacher Reports

The first two teachers who were interviewed had taught John during his junior year. The first was his math teacher. John earned a D at the end of the year in her class although it had fluctuated throughout the year between D's and F's. The second teacher was his advanced placement American history teacher. John's final grade in her class was a C.
Math

John's math teacher reported that he expended very little effort in her class, usually completing less than fifty percent of the assignments and frequently choosing not to turn in anything. Some days when there were twenty problems assigned, he would complete two. When the work was turned in, it was sloppy. She stated that what was complete was accurate, but he was not putting forth much effort.

She indicated that she felt grades were unimportant to him. She commented that she would tease him by saying she was going to light a fire under him but was not sure that he would notice.

For a while he was also having trouble staying awake even though the class was during the morning. When she talked with him about her not seeing what he was truly capable of doing, he just smiled. She felt it was never really important enough for him to do better although he would verbalize his intent to get busy and do better.

She indicated that John rarely asked questions and did not take notes. If she asked him a specific question, he would respond; but it got to a point at which he had not learned enough to have the foundation to respond. Toward the end of the year, he realized that he was going to repeat the course so he chose to do even less than at the beginning. She stated that, perhaps, what he was doing the
previous years had been so simple for him that he could tune in and out and still catch back up; but he may have reached the level at which that method of participation would no longer work for him.

When she had spoken with his gifted education teacher about him, she said he began to talk more to her. During his senior year he had been talking to her regularly assuring her that he was doing well.

**History**

His American history teacher described John as a very laid-back student. He again completed about fifty percent of his work, doing only what he felt he actually had to do. She felt he was not concerned about his grade. She reported that she could not recall his participating in any classroom discussions although she hastened to add that he was not disruptive almost to the point of being passive. She indicated that she felt that, perhaps, he was just not challenged enough.

When other students in the classroom would make ridiculous responses during discussions, she said, he would look at her and just smile almost as though it was an inside joke. She said she did not feel he was a loner, but he did not need others to provide him with reinforcement although he was not self-motivated to do the class work. When asked what words would best describe him, she said quiet, bright,
and positive. In addition, she felt he had a genuine concern for other people.

These were both teachers from his junior year. During his senior year, his English teacher described him as really not standing out in the class. In fact, when asked if he would mind the researcher's observing John, he had to think for a moment about which class he was in even though the teacher only had one senior class which had gifted and talented students. He said John did not actively participate in group work but was completing assignments.

Gifted Education

The third interview was with the gifted education teacher who had worked with John in seminars throughout his high school years. She described him as a person who had high-level thinking but who did not expose it to the people he had known for years, meaning his classmates and teachers. She said he spoke very little in the seminars except once when he spoke of his older brother. The discussion had been about the American dream which the students had defined from a materialistic point of view. The students had said that schools should not spend time and money on students who broke the rules and cared less about an education. John leaped into the discussion commenting that they would have thrown his brother out of a school such as they were advocating. She said it was obvious that he did not regard
his brother as unsuccessful.

This teacher described John as tall and lanky in stature and said that some students his age would be sensitive about this but that he was either doing a great job of compensating through his choice of friends or it truly didn’t bother him. She believed the latter was true. She said, this young man was at peace with himself.

With regard to motivation, she felt that he was not affected by a teacher’s badgering him to complete assignments, although he would not show any animosity toward the teacher who did so.

His writings have all been short and matter-of-fact according to her. In one of his short essays critiquing the seminar atmosphere of the class, he wrote, "Discussions would have been more interesting if more people were willing to talk." Yet, he himself chose not to participate except to offer asides to those around him. She did, however, feel as though John was talking about his friend’s not participating in discussions when this friend had so much to offer.

Another writing dealt with limits; and his response, which was to be done in a fifteen minute time period, simply stated, "It is known that we must die, but I would like to find a way that we could live normally but never die." That was the complete fifteen minute writing.
John’s friend in the class was a student of bi-racial background, Vietnamese and Caucasian, who described himself in a self-paper as a "beat-up old station wagon." This friendship may have influenced a writing John had on the subject of what he wanted in the future. He said he wanted "a world at peace - a world without prejudice. No low class, no high class, but simply one class. What I want isn’t much, but it’s unattainable." The teacher stated that for the past four years there had been a consistency in his writing and consistency seems to be a trait for this young man.

She said when he spoke of his parents, he did so with a casual sense of acceptance. He always talked of serious subjects with a slight laugh, not in an unkind sense but in a light accepting manner. She stated that he seemed to step back and look at situations with an acceptance of life, making occasional light-hearted fun of difficult situations.

With regard to goal setting, this teacher believed that John had set some high goals which included obtaining a college degree in architecture, a field which was very competitive.

She described John as having a well-integrated personality - without pieces which do not fit. She saw John throughout the past four years as being comfortable with himself, and selective in both his choice of friends and
clubs. She said that she felt that whatever he chose to do reflected the basic kindness and respect that he had toward people. She also stated that she felt that, although he might not respond to people who talked down to him, he would tolerate them.

This teacher, as the math and American history teacher, communicated with John through subtle smiles. She felt John was successful because he had learned to like himself.

Observations

Two observations were conducted, one in English and one in Physics. These took place during a two-week period.

English

The first observation was done during an English class, the third period of the day, just before lunch. On the day of the observation, John was wearing a black, rock-group t-shirt and jeans. The students were seated at large tables which formed a U-shape around the room.

The first assignment was for the students to write in their journals about a lousy day. John was diligently working although he looked up periodically to see the observer. The activity was to last ten minutes, but John had completed within the first few minutes and just sat quietly during the rest of the time.

The class then transitioned into a lively group activity about Henry V. Although he took out the necessary
paperwork, John did not actively participate in the lesson. He was attentive and, for a few moments, even seemed nervous. He did not even laugh at the humorous events going on around him. Even though he did not contribute to the group as a whole, he did make asides to those students nearby.

This particular activity took twenty minutes, but John lost interest after about ten minutes. He began to hold his hand under his chin. He neither volunteered answers nor was called upon by classmates conducting the discussion. By the end of this activity, he was slouching back in his chair.

The next activity involved small-group work. Although he took out the necessary materials, he interacted only minimally with his group members. When other group members made suggestions, he shrugged his shoulders in response.

When the bell rang, he was quickly out of the room.

Physics

The second observation occurred a week later during a physics class. This was the first period of the day. Again, John was wearing a black A/C D/C t-shirt and jeans. He was also wearing a baseball cap because it was hat day during the homecoming week festivities.

John sat in the middle of the classroom which was arranged in the traditional classroom rows. Although he was in the middle of the classroom, there was no one seated in
front or in back of him. His close friend sat in the row to the right of him and two seats back.

When the observation began, John had his hand by his mouth and was chatting with his friend while the school announcements were being read. The first activity was the teacher's checking homework then asking for questions. John had done his homework, at least enough to show the teacher that he had attempted which was all that was required. Knowing that John was being observed, the teacher deliberately asked him if he had any specific questions about the assignment. John replied that he did not.

About ten minutes into the period, John became fairly quiet and focused on the teacher's lesson. The teacher was discussing his weekend flight in a newly built ultralight plane which interested John. However, about fifteen minutes later, he seemed to be daydreaming.

The teacher began to do problems on the board in preparation for the upcoming test. John focused on the board work for about five minutes and then began passing a protractor and ruler back and forth with his friend. He was not following the class work but was completing a lab assignment which had to be turned in soon. He was completely engrossed in the lab write-up and paid little or no attention to the explanations being done on the board. He took no notes nor copied the problems from the board.
which were to be on the test.

The teacher again called on him, this time looking for an answer to some of the board work. Although hesitant, John gave an acceptable answer. As the period drew to a close, John began to yawn. He left quickly after the bell.

Qualitative Research Questions

In order to find information which might explain the low academic self-concept and low academic achievement of one gifted student the following questions were asked:

1. What are the characteristics of the student’s family system?

John was living in a blended family. About a year before the study, his mother had remarried for the second time. The family consisted of mother and stepfather, an older brother, a stepsister (2 weeks older), John, and a younger stepbrother. His natural brother had also moved into the house temporarily.

John’s natural father was living about one hour away. He had remarried and had two stepdaughters, one in her late twenties and one approximately John’s age.

John’s maternal grandparents lived several hours away, but there was not a positive relationship between them and John’s mother at the time of the interview.

John’s paternal grandparents were both deceased. His grandmother had died about a year before the interview. He
indicated that there was little communication with his natural father's relatives.

2. What behaviors both academic and social are displayed in the classroom?

John could have been left unnoticed by the teacher in the classroom. He did not participate except when called upon and then gave only brief answers to questions asked. He did not initiate questions nor participate in class discussions. His written work was brief and, in the case of his mathematics class, often not complete. In addition, the homework assignments were completed only about 50 percent of the time. At times he would work on assignments other than the one being presented. At no time did he cause any class disruption.

John interacted occasionally with those around him to make aside comments about the class discussion. He had one close friend in one of his classes and would make comments to him; however, these were related to the assignment he was working on rather than on social issues. He appeared to be accepted by other students in the classroom although he was not included in the discussions when a student was leading them.

John described himself as aggressive because he would struggle to get what he wanted. But teachers described him as passive with regard to participation and achievement.
3. What are the student's study habits at home not delineated by the inventories?

John indicated that he spent little time on his studies during his junior year. The time he did spend was on the actual assigned homework and not on additional studying or reviewing notes. If he had difficulty he would seldom ask for help except occasionally to ask a friend. He said he would usually wait until the next day when his teacher would go over the work in class.

John said he did his work in his bedroom with the door closed. He enjoyed playing his stereo while doing his work and indicated that he like the music to be loud. He also indicated that his mother would occasionally ask him how his classes were going but usually did not interfere with his studies. He indicated that he had never had to do much work to get satisfactory grades.

4. How might the student's peer relationships be described?

John had only a few selected friends. The one person, with whom he had been friends for a long time, was bi-racial. His friend was quiet and appeared to have a low self-concept according to his gifted education teacher who had known both boys for four years. In addition both he and his mother indicated that he had one female friend, not a girlfriend, with whom he liked to converse but not
necessarily build a relationship.

John did not see himself as popular because he said he chose not to identify himself with one social group, something he felt was necessary to be popular. In addition he indicated that he preferred to keep to himself and not share problems with others.

5. What type of goals does the student have?

John's academic goals were to attend a four-college and attain at least a bachelor's degree in architecture. He saw himself at age 25 as a struggling architect. His goal was singular, and relationships with others were not mentioned.

He did say that he did want to attend a school which was away from the family although he was not completely excluding schools within four hours of home.

There appeared to be two themes which were evident throughout the research. The first was the development of self-reliance. This development showed the key role of personal perception in decision making. The overriding concept of loneliness perceived positively becoming independence will be discussed in Chapter V. When others interfered with John so as to disrupt his independence, he had to make adjustments in his lifestyle to regain it.

The second was the development of a pattern of acceptance or coping with whatever situation life had to offer based on this self-reliance. He had learned to cope
with many difficult changes throughout his life; however, when these changes became too numerous, he needed to step back and reassess the situation in order to accept it. The affect of these changes prior to his junior year and the time it took for John to re-adjust played a key role in his academic achievement.
CHAPTER V

DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

The purpose of this study was to determine if there was a relationship among learning style, academic self-concept and academic achievement and to find an underachieving individual who was representative of this relationship and determine what factors in this student's life had an impact on these results. This chapter contains conclusions drawn based upon information presented in the first four chapters in both the quantitative and qualitative portions of the study and implications for further research.

Discussion

1. Will gifted students who have Learning Profile I have higher achievement grades independent of academic self-concept than gifted students who have Learning Profile II as measured by the LSI?

In the quantitative portion of the research, Learning Profile did have a significant effect on academic achievement. The multiple regression analysis showed a main effects significance at .055 and an interaction at .08 which were probably underestimates because of the coding of the continuous data into Profiles I and II. Profile I included all scores which were equal to or above 480, and Profile II included all scores below 480 out of a possible 640 points.
which put the division at 66 percent of the total. Although this study confirmed previous studies which indicated that Learning Profile I was indicative of academic achievement, in this study there were only 19 cases represented by Learning Profile I and 55 cases represented in Learning Profile II; and 71 percent of the students with a 3.0 or higher G.P.A. (58 out of 74 students) had Learning Profile II (Appendix B). So, although there was a positive linear relationship, the number of students in each category was substantially unequal.

The correlation studies only indicated a weak linear relationship (p=0.336) between these two variables, academic achievement and Learning Profile. In addition, when the total learning style profile was categorized into Profile I and Profile II, the correlation fell to p=0.241.

Because the sample was drawn from a population of gifted students who frequently were high academic achievers and often had study preferences which were conducive to their academic achievement, there were no students who attained a score below 320 which would have indicated no, or very low, preference to any of the selected learning style categories.

Of the eight variables which composed the Learning Profile, persistence had a 0.458 correlation with academic achievement; parent motivated, a 0.379; and teacher
motivated, a 0.359. When a multiple regression analysis was run to see if there would be any relationship with these variables to academic achievement at the p=0.05 significance level, the results indicated significance for persistence at p=0.001; parent motivated at p=0.013, and no significance for teacher motivated, p=0.147. The squared multiple R was a 0.326. Therefore, only 32.6 percent of the variation in academic achievement could be accounted for by these variables, leaving 67.4 percent of the variation unexplained. No interaction study was done.

If the sample had been larger, more significant results may have been obtained because as the sample size (n) increases the amount of information usually increases and the variability of the distribution of the means decreases (Ott, Larson, and Mendenhall, 1987, p. 226). In addition, other profiles may have been developed to determine which variables in the Learning Style Inventory would provide a better profile of the academically successful gifted student. These variables may include combinations of motivation and responsibility, temperature and persistence, or time of day and ways of learning.

2. Will gifted students who are in the upper 50th percentile in academic self-concept on the SAM have significantly higher achievement grades than gifted students in the lower 50th percentile in academic self-concept
independent of learning style?

The regression model showed a significant positive linear relationship (p=.01) between academic self-concept and academic achievement; and the correlation between academic self-concept and academic achievement was 0.575 (ASCTOTAL). However, when the academic self-concept was divided into categories (ASCCATT) at the 50th percentile, the correlation fell to 0.375 because the probability of error was increased by combining the scores which lay between the 51st percentile and the 99th percentile into High Academic Self-Concept and those scores below the 51st percentile into Low Academic Self-Concept. In addition, a frequency distribution showed that there were only 8 students who received a total score below the 50th percentile on academic self-concept, leaving 66 in the upper 50th percentile; and only 31 percent of the students with a G.P.A. below 3.0 (only 16 out of 74 students) had low academic self-concept (Appendix B). Again this may be the result of selecting a population which frequently achieves academic success. However, the quantitative study was unable to explain whether the individual's academic self-concept preceded the academic achievement or the reverse for those students who did have low academic self-concept and low academic achievement.
3. Is there a difference in academic achievement as a function of the interaction between Learning Profile and Academic Self-Concept?

Profile I appeared to predict high academic achievement whether Academic Self-Concept was low or high. Whereas, Profile II appeared to predict low academic achievement when Academic Self-Concept was low and high academic achievement when Academic Self-Concept was high. However, it is important to note that all of the independent variables (academic self-concept, learning profile, sex, and interaction) combined only account for 23.4 percent of the variation in academic achievement. This leaves 76.6 percent of the variation unexplained.

Due to the quasi-experimental nature of the research design, there were many factors which were not controlled. To preserve the maximum number in the sample, socioeconomic factors were not considered. These factors may have affected the results because of the diversity of the school population. In addition, the 23.4 percent of the academic achievement explained by learning style, academic self-concept, sex, and the interaction of learning style and academic self-concept, may have been low due to categorizing the data even though these other variables were not taken into consideration.

Since the inventories had to be done during the first
two morning periods during the school day due to availability of space, those students who function better in the afternoon may have been affected. In addition, the inventories were done during the spring season. If they had been done at the beginning of the school term in the fall, the attitudes reflected by the scores on the self-report inventories may have been different because students appear to be more interested in learning after coming back from summer vacation than at the end of the school year.

This study may also have been affected by the fact that parental permission had to be obtained. The permission forms were mailed home with a self-addressed, stamped return envelope to avoid the possibility of the forms staying in student lockers or being lost before they got home. However, the parents of 19 students did not return the forms. Although a follow-up study on these 19 students was not conducted, their results may have had an impact on the study. In addition, although the Green, et al. (1988) study had predicted that fifteen percent of the gifted population were underachievers, twenty-one percent of the sample had a grade point average below a 3.0.

Another factor that may have had an impact on the study was the use of grades as a measure of academic achievement since the achievement grades were affected by the teaching and learning environments. Although these students were
grouped in the English and social studies classes, there was diversity in the math and science courses taken. Therefore, the teachers themselves may have had an affect upon the results.

In addition, the difficulty level of the courses was not factored in in order to preserve the sample size and may have had an additional impact since the sample was drawn across grade levels, and advanced placement courses are not offered to students in the ninth or tenth grades. A study of ninth and tenth grade students who are not in advanced placement courses may have had different results from a study of eleventh and twelfth grade students taking these courses.

Case Study

The fact that the quantitative portion of the study was done in the spring of John's junior year and the qualitative study, in the fall of his senior year seemed to have a particularly strong affect, which the researcher first thought would be negative but really became positive on the research. The researcher was able to see how John struggled through difficulties and turned them into strengths, a pattern which might be considered his lifestyle.

During the summer months between his junior and senior years in high school, there was a change in John’s attitude toward school. This was the time he began seriously
thinking about applying to colleges and, as he stated, a "realization" occurred.

There were two predominate themes about John that could be drawn from the case study. The first was the development of self-reliance. This self-reliance was evident in the home, academic, and social environments. At age five, according to his mother, John rejected his brother’s attempts to speak for him. As he grew, although having been impacted by his parents divorce, and having first chosen to live with his father, when he was in elementary school, independent of his brother, John moved back with his mother who had remarried.

Looking at this sequence, the researcher asked John to whom he felt closer, mother or father. His comment was at first that he felt closer to his father. Then he stopped and said that his brother was really closer to his father than he and that, perhaps, he was really closer to his mother. Then the researcher asked if he felt it was difficult to share his mother with the new family he had acquired a year ago, and his comment was "Not really, because she always had boyfriends around." The researcher’s sense was that John was saying even when he had his mother around, he did not feel that he really had her exclusively. However, since his father, he perceived, was closer to his brother, he really had to become self-reliant. The sense
then was that he was really feeling a loneliness which he had turned into self-reliance through, a second theme, that of a positive acceptance of the situations he faced.

An additional issue here was one of trust. In order to be reliant one person must trust the other people upon whom he is relying. John knew that he could rely upon himself but he had observed his parents, through their divorce and remarriages, as breaking committed relationships.

It appeared that John perceived himself as an outsider both in the family and at school. Although he shared some feelings with his mother, he kept a lot inside. "My problems are my problems," he stated. This carried over into his social relationships. His closest friend was also an outsider in the sense that he was bi-racial and really considered himself to be "the old station wagon." John did not consider himself popular; in fact, he felt that in order to be popular he had to be part of a clique and that was certainly not what he wanted to do. He said, "I am my own clique." However, at no time did he call attention to himself by his being a clique unto himself. He dressed as the other students did, and he listened to the same music they did — although he also listened to Mozart. He did not have a girlfriend at the time of the interview, but did enjoy a relationship with a girl at a different high school whose father, according to John's mother, was very
intelligent.

In the classroom, John continued to play out his self-reliant role. He participated when called upon, but did not share of himself. The only exception to this was the situation described by his gifted education teacher in which the class was discussing success in a materialistic way, saying that they would like to see schools without students who do not care about their education. This discussion caused John to respond; perhaps he was more sensitive to this issue because of his relationship with his brother. However, this was uncharacteristic behavior for John. His senior English teacher was not even aware of the class in which he had John. John’s non-interactive behaviors, except to make asides critiquing the people and situations going on at the time, allowed him to withdraw and preserve his uniqueness as his own clique.

Even the fact the John’s teachers saw him as passive and he saw himself as aggressive carried out this theme. John did not participate actively, but during the time that he was not interacting he was struggling to maintain his independence and uniqueness.

With regard to John’s relationship with his older brother, John had chosen a different path to deal with the setbacks he had encountered. John had said he chose not to follow the same behaviors because it was his "moral thing."
The researcher contends that it was much more than this. The reason that he chose not to turn his loneliness into anger was because he had developed a pattern of self-reliance with positive acceptance as early as age five. Therefore, he was able to personally interpret the divorce in a positive way which allowed him to function effectively.

When, just prior to his junior year, he was forced to become a part of a family, the researcher believed that his pattern of self-reliance through positive acceptance was threatened. This new family was always "there," as he stated. He was unable to close himself off. He was not allowed to work because his mother was worried about his work load interfering with his heavy academic schedule. He became really angry because this work may have been his only way to maintain that independence. However, he thought through the situation, accepted her decision, and found another way to maintain independence. He stated that he was seldom home. He would visit with his friend primarily, but he avoided becoming an integral part of the family.

He did, however, like being the "responsible one," as he called himself. He was the only child who could drive and do the errands; again this allowed him that independence or self-reliance. He did not seem to care if others relied upon him, but he did not want to have to rely upon or, perhaps, trust others.
The adjustment to this new environment coupled with a difficult course load at high school probably had an impact upon his academic achievement. Prior to this time, even though John faced setbacks, he could easily fall back on the familiar pattern of self-reliance or independence for acceptance of the situation. He could always find a place to be alone and work through each setback. This time he was not alone. There was a family. This blended family wanted John to become a part of it. Becoming part of a family required relying on others, something which John chose not to do.

Therefore, he needed to find a way in which he could be independent and still function as a family member. The researcher believed that this struggle interfered with John’s focus on his academics. Before this time because of his high level of intelligence, he was able to do very little work and still understand his assignments. However, he was having to re-adjust his patterns at home. This re-adjustment took time and energy away from his academics.

John, during the beginning of his senior year and probably during the summer before, had found a way to juggle his independence with the demands of this new family. As a result he was able to refocus on the academics and improve his grades.

During the interviews, the researcher noted that John’s
mother was always very positive, excited, and spontaneous. She was willing to share information and often gave more information than was asked. John, however, would always repeat at least a portion of the question asked. For example, when the researcher said, "Tell me about your father," he would say, "My father" then pause. His answers were often very brief, giving only the information asked. An example of the sequence regarding his privacy at home went like this:

Researcher: "There's always someone home?"
John: "They're always there."
Researcher: "Mom? Stepdad?"
John: "Mom...I used to do my homework at night so pretty much everybody was home."
Researcher: "And you're in your room. The door is open? Closed?"
John: "Closed."
Researcher: "Tight?"
John: "Privacy."

One of the main questions that had come up from the fact that there was a positive linear relationship between academic self-concept and academic achievement was whether John's low academic self-concept preceded or followed his lack of academic success. John said that he saw himself as not doing well, what he called academic disaster, during his
junior year. As a result, he said his academic self-concept was low. During the beginning of his senior year, he saw himself as academically strong and, as a result, his academic self-concept appeared strong. This sequence may not hold for others with low academic self-concept, but it was the interpretation that John had.

The researcher had had the privilege of working with John as his high school counselor throughout his high school career. As a result, she was able to see the change in academic performance as it was happening since the report cards as well as interim reports were sent to her. In addition, teachers who noticed changes in performance often reported these changes so that the counselor might be able to identify a problem. But until the study was done, it was difficult to assess the reasons behind John’s academic decline.

Conclusions

The Learning Style Inventory or the Student Attitude Measure can be used to classify students, but used alone do not provide all the answers and may even cause the counselor to focus in a direction that, even when corrected, may only provide a minimal change in the underachievement.

The Learning Style Inventory, however, can be used by the high school counselor to assess the ways in which the underachieving gifted students learn and to help students
develop ways to adapt their learning styles to the teaching styles of the instructors. For example, if a student is an auditory learner and the teacher primarily has the student copy work from the board and do written work, the student may need to use tutors to explain the work or have a parent or friend ask him/her questions about it in order to maximize the learning.

The Student Attitude Measure can be used by the high school counselor to assess the way the underachieving gifted students perceive their academic achievement. Knowing there is a positive linear relationship between academic self-concept and academic achievement, the counselor may use this instrument to determine whether this is an area which needs to be explored further through interviews and observations to understand underachievement.

The caution still remains that these instruments are tools with a focus, and that sometimes that focus prevents the counselor from seeing the whole picture. Much more can be learned from a qualitative study of the underachieving students than from an evaluation of test results.

Implications for Counselors

One of the greatest outcomes from this research was the reinforcement of the uniqueness of each individual's academic performance because of its relationship to a multitude of circumstances; and, in order to impact upon
this performance, the high school counselor must understand the individual situations. There was no magic formula for academic success for the counselor to pass on to the parents. This conclusion was reinforced by the fact that 77.6 percent of the variance in academic achievement was unexplained by the independent variables.

One of the difficulties in a research project such as this is that the researcher started out with a focus, learning style and academic self-concept and the relationship with academic achievement. The results were significant; there was a positive linear relationship. The research could have been concluded. Then the researcher could have looked at the results and identified John as an underachiever attributing this underachievement to the facts that he had Learning Profile II and a low academic self-concept. This neat package could have been sent home to the parent who could in turn try to force him to fit into Learning Profile I or try to understand what low academic self-concept meant.

Fortunately, however, the researcher was able to carry the study one step further and look at a more comprehensive picture of John, his interactions with peers, his family structure, goals, and personal perceptions of situations which impact upon underachievement. This qualitative portion of the study was where the key to understanding
John's lack of achievement came. The counselor usually knows just by looking at the report cards or talking with teachers who is underachieving. It is not necessary to go through a testing procedure to identify underachieving gifted students. The important part of this comprehensive picture is knowing the individuals and not just classifying them. Much more can be learned by interviews and observations than can be deduced by testing.

When the counselor can begin early in the underachieving gifted student's high school career to determine the circumstances which might be interfering with the student's academic success, the counselor may be able to assist him/her by providing interventions which are designed for the individual's personal situation.

Implications for Further Study

First, all of the students in this research were from the gifted program in one high school. Future research efforts could include additional high schools with a greater diversity in population. Besides decreasing the chance error due to a limited sample size, the larger sample could allow the researcher to increase minority representation, thus, being able to determine relationships among learning styles and academic self-concept with academic achievement using an ethnicity component.

Second, further research might also eliminate the
effect of grade level with either using a larger sample across grade levels and making comparisons among the grade levels or selecting a sample across one grade level among several schools because the difficulty level of the classes increases at higher grade levels. In addition, if the students have been grouped, the teaching style of the instructors may be factored into the research.

Third, with regard to qualitative studies, further research might include a case study of a high academic achiever who has low academic self-concept, one who has a high academic self-concept and high achievement, or one who has low academic self-concept and high achievement. Introducing the Learning Profile component into this would also be of interest. For example a student with Learning Profile I and low Academic Self-Concept or Profile II with high Academic Self-concept might be studied because these students would not be representative of the results and may provide information as to the reason that some students do not fit into the mold.

Fourth, for this particular case study, further research could be done with John's brother to understand his personal perspectives on the setbacks which he had and how he learned to cope with situations.

Fifth, an additional case study of John's bi-racial friend or other students who are from diverse cultural
background would provide a basis for further research. This student could provide insight into the affect that his culture had on his self-concept as well as into the educational expectations his parents had for him.

Sixth, research which would focus on in-tact families as opposed to either blended or single-parent families could provide additional perspectives on the question of impacts of learning style and academic self-concept on academic achievement. Students in in-tact families may not have the need to readjust as John did because the stability may not change as dramatically.

Seventh, stemming from this study, research could be done on the impact of divorce on academic achievement either with the gifted population or students across ability levels. Because John coped with the divorces in one way, whereas his brother chose another, may be the result of more than personal perspective. The relationship of the natural parents to the children may also have an affect on the students’ academic performance because the study showed some correlation between parent motivation and academic achievement.

Any of these research areas could be studies not only at the high school level, but also the elementary, middle, and even college levels because academic achievement does not appear to be stagnant. Performance changed for John
because of circumstances within the family, and these changes may occur at any educational level. The affects of these changes at different levels because of the age and maturity of the students may be important.
REFERENCES


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APPENDIX A

Letters to Parents
May 11, 1992

Dear Parents of ____________________:

As a part of continued concern about the importance of high school achievement on college entrance and performance, Mrs. Dorothy McCabe, a high school counselor and doctoral student at Virginia Tech, is conducting research on the relationship of learning style, academic self-concept (performance-based and reference-based), and academic achievement among gifted high school youth.

Mrs. McCabe along with the gifted education staff will be administering two inventories which, together, take approximately one hour and will assist in assessing this relationship and provide tools with which to help students understand their individual learning styles and academic self-concepts. Mrs. McCabe will provide feedback to the students through the profiles which are generated in the scoring of these two inventories: Learning Style Inventory (LSI) and School Attitude Measure (SAM). The LSI profile will include information on the following stimuli which affect the student’s learning: Environmental, Emotional (motivation/persistence), Sociological, Physical, and Psychological (global/analytical). The SAM profile includes information regarding Motivation for Schooling, Academic Self-Concept, and Sense of Control over Performance.

The results will be given to the students at the beginning of the 1992-93 school year and will be used to help establish programs for the gifted students. Senior results will be mailed to them with a letter explaining the profiles.

In addition to the individual feedback, the data will be coded in such a way that no child can be identified by any information and analyses will be run and reported in this manner. This information will be summarized in Mrs. McCabe’s Doctoral Dissertation and submitted to Virginia Polytechnic Institute and State University. Please be aware that specific information about a particular child will only be available to Mrs. McCabe and specific parents who request the information about their children.

Please sign and return this permission form in the enclosed envelope. If you have any questions about these inventories or the testing, please call Mrs. McCabe at Potomac High School, 221-1134.

Sincerely,

Dorothy L. McCabe
Counselor
Potomac Senior High School
September 14, 1992

Dear Parent(s) of ______________________,

After reviewing the inventory results of the Learning Style Inventory and the Student Attitude Measure, I would like to interview your child and observe him/her in the classroom as part of my doctoral research. I will hold two interviews, one before the observations and one after. I will be careful to schedule these interviews, which should last no longer than 30 minutes each, at a time convenient for your child.

The data will be coded in such a way that no child can be identified by any information, and analyses will be run and reported in this manner. This information will be summarized in my Doctoral Dissertation and submitted to Virginia Polytechnic Institute and State University. Please be aware that specific information about a particular child will only be available to me and specific parents who request the information about their children.

If you have any questions regarding selection criteria or interview questions, please call me at school at 221-1134.

Please sign and return this permission form with your child.

Sincerely,

Dorothy L. McCabe
Counselor
Potomac Senior High School

Student's Name________________________________________

Parent's Signature____________________________________
September 14, 1992

Dear Parents of ________________

Thank you for allowing your son/daughter to participate in the research for my doctoral program at Virginia Tech. Attached please find your child’s Learning Style Profile which contains twenty-two category preferences. The scale is from 20 to 80 but is by no means as scale in which the upper level is better. It is simply an inventory which indicates the way in which your child prefers to learn. I hope that it will be helpful to you when providing a study atmosphere at home which your child has indicated would be beneficial.

In addition please find an individually itemized School Attitude Measure sheet. The results only came in class sets not individual profiles; therefore, I have broken these down to include only your child’s results along with an explanation of each category.

If you have any questions regarding these inventories please call me at school at 221-1134.

I am still processing statistics but should be completed by the end of this semester at which time the compiled results in the form of the dissertation will be available for your perusal on a check-out basis.

Thank you again for allowing your child to participate in this research which I hope will be useful in exploring ways in which the school along with the parents can help students academically.

Sincerely,

Dorothy L. McCabe
Counselor
APPENDIX B

Frequency Tables
FREQUENCIES

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71% OF THE STUDENTS WITH A 3.0+ GPA HAD LEARNING PROFILE II

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ACADEMIC SELF-CONCEPT

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0.05% OF THE STUDENTS WITH A 3.0+ GPA HAD LOW ACADEMIC SELF-CONCEPT

31% OF THE STUDENTS WITH A GPA BELOW 3.0 HAD LOW ACADEMIC SELF-CONCEPT
VITA
Dorothy Louise McCabe

EDUCATION

Ed.D., 1992, College of Education, Virginia Polytechnic Institute and State University
Major Area: Counselor Education
Dissertation: The Underachieving Gifted Student: An Evaluation of the Relationship of Learning Style and Academic Self-Concept with Academic Achievement and a Case Study of One Gifted High School Student

M.S., 1984, Department of Counselor Education, San Diego State University, California

B.S., 1967, Kent State University, Ohio
Major Area: English Education

PROFESSIONAL EXPERIENCE

1986 - Present
High School Counselor, Prince William County Schools, Potomac High School, Dumfries, Virginia
Substance Abuse Prevention Committee Coordinator
Member of the County Gifted Education Screening Committee
Peer Counseling Sponsor

1984 - 1986
High School Counselor, Spotsylvania County Schools, Spotsylvania High School, Spotsylvania, Virginia

1976 - 1978
S.T.A.Y. LAB Instructor, Pascagoula City Schools, Pascagoula Junior High School, Pascagoula, Mississippi

1973 - 1974
Language Arts Instructor, D.O.D. Schools, Base Correctional Facility, Subic Bay, Republic of the Philippines
1967 - 1969

English Teacher, Parma City School District
Parma Senior High School, Parma, Ohio

MEMBERSHIPS IN PROFESSIONAL ORGANIZATIONS

Member, National Education Association

Member, Prince William County Education Association

Member, Virginia Counselors Association

Member, Prince William County Regional Counselors Association


Dorothy L. McCabe

December 1992

Date