Factors That Differentiate Underachieving Gifted Students From High-Achieving Gifted Students

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ABSTRACT

The purpose of this study was to examine whether gifted achievers and gifted underachievers differ in their general academic self-perceptions, attitudes toward school, attitudes toward teachers, motivation and self-regulation, and goal valuation. The sample consisted of 56 gifted underachievers and 122 gifted achievers from 28 high schools nationwide. Gifted achievers and gifted underachievers differed in their attitudes toward school, attitudes toward teachers, motivation/self-regulation, and goal valuation, but not their academic self-perceptions. In addition, the logistic regression analysis correctly classified over 81% of the sample as either gifted achievers or gifted underachievers using their motivation/self-regulation and goal valuation self-ratings. This study represents an important step toward quantifying factors related to the underachievement of gifted adolescents.

All individuals have the ability to learn and attain self-fulfillment; however, many children are at risk of failing to achieve their academic potential. Gifted students are one group of exceptional learners who are not normally considered at risk for academic failure or problems. However, the underachievement of academically gifted students is an area of concern and frustration for many parents, teachers, and counselors. Why do some students who seem capable of outstanding performance fail to realize their potential? Many articles and books have been devoted to the topic. Unfortunately, despite the widespread interest, researchers possess only a rudimentary understanding of this phenomenon. Several very basic questions about gifted underachievers remain unanswered: Do achievers and underachievers share any common behavioral or personality characteristics? How do gifted underachievers differ from gifted achievers? What causes some gifted students to underachieve in school? Can we predict which gifted students are at the greatest risk for underachievement?

The purpose of this study was to explore these issues by examining whether known groups of gifted achievers

PUTTING THE RESEARCH TO USE

The results of this study suggest that teachers and counselors who work with gifted underachievers should assess whether these students value the goals of school and whether they are motivated to attain those goals. Students must either value the work they have been given or value the outcome (extrinsic rewards) of that work. If they value neither the task nor the outcome, they will not possess the motivation to give the task their best effort. We believe that many students underachieve because they find no intrinsic or extrinsic benefits to school. Therefore, interventions for bright underachievers should include goal setting and future-planning activities. In addition, creating classes and assignments that are more enjoyable and intrinsically motivating for students may help to reverse their academic underachievement. Finally, although underachievers appear to share some common characteristics, the great variability in the responses of the underachievers in this study suggests that they are not a homogeneous group. Therefore, any interventions designed to reverse underachievement in gifted adolescents must be tailored to the individual student. Teachers may want to assess whether students are high or low on each of the five factors measured by the SAAS-R (academic self-perceptions, attitudes toward school, attitudes toward teachers, motivation/self-regulation, and goal valuation) and plan individual interventions that match their unique profiles.
and underachievers differed in their general academic self-perceptions, attitudes toward school, attitudes toward teachers, motivation and self-regulation, and goal valuation. An additional goal was to predict the students’ group membership as either gifted achievers or gifted underachievers with at least 80% accuracy using logistic regression techniques.

Review of the Literature

How Do We Define Underachievement?

The most common definition characterizes underachievement as a discrepancy between potential (or ability) and performance (or achievement; Dowdall & Colangelo, 1982; Whitmore, 1980). For the purposes of this study, we have chosen the following definition of gifted underachievers:

Underachievers are students who exhibit a severe discrepancy between expected achievement (as measured by standardized achievement test scores or cognitive or intellectual ability assessments) and actual achievement (as measured by class grades and teacher evaluations). To be classified as an underachiever, the discrepancy between expected and actual achievement must not be the direct result of a diagnosed learning disability. Gifted underachievers are underachievers who exhibit superior scores on measures of expected achievement (i.e., standardized achievement test scores or cognitive or intellectual ability assessments). (Reis & McCoach, 2000, p. 157; emphasis added)

What Factors Are Associated With Underachievement?

This article focuses on personal characteristics associated with underachievement. However, academic underachievement can sometimes be indicative of a more serious physical, mental, or emotional issue. For example, Moon and Hall (1998) noted that learning disabilities, attention-deficit/hyperactivity disorder (ADHD), hearing impairment, nontraditional learning styles, and emotional problems could contribute to academic underachievement. Therefore, school personnel should screen an underachieving gifted student for a wide variety of physical, mental, or emotional problems before treating his or her student’s scholastic difficulties as the primary focus.

Once educators rule out these problems, they can explore the role that students’ perceptions, attitudes, and motivation play in underachievement. Researchers have attempted to isolate the psychological factors that appear to be correlated with underachievement. Although lists and descriptions of “common personality traits” of underachievers abound, the utility of such lists is questionable. Most of the research that investigates common characteristics of underachieving students has employed qualitative, clinical, or single-subject research methodology. Very few quantitative studies have examined whether these factors actually distinguish achievers from underachievers. Characteristics commonly associated with underachievement include low academic self-perception, negative attitudes toward school, negative attitudes toward teachers and classes, low motivation and self-regulation, and low goal valuation (Dowdall & Colangelo, 1982; Reis & McCoach, 2000; Whitmore, 1980).

Academic self-perceptions. Students develop confidence in many ways, and those who are confident about their skills are more likely to engage in a variety of activities. The perceptions students have about their skills influence the types of activities they select, how much they challenge themselves at those activities, and the persistence they exhibit once they are involved in the activities (Ames, 1990; Bandura, 1977, 1986; Schunk, 1981, 1984).

Academic self-concept involves a description and an evaluation of one’s perceived academic abilities (Byrne, 1996; Hattie, 1992). Academic self-concept encompasses global beliefs of self-worth associated with one’s perceived academic competence. Academic self-concept is a multidimensional construct that involves both internal and external comparisons. Students compare their own performance with that of their classmates (an external comparison), as well as with their own performance in other areas (an internal comparison; Byrne). Social comparison theory suggests that, when people compare favorably to those around them in a particular domain, they are more likely to maintain high self-concepts in that domain. Therefore, academically gifted students should maintain high academic self-concepts because their academic abilities compare favorably to those of their fellow students. There is some evidence to suggest that academically gifted students do possess higher academic self-concepts than nongifted students (Hoge & Renzulli, 1993), especially when they are placed in mixed-ability or heterogeneous grouped classes or schools (Marsh, Chessor, Craven, & Roche, 1995).

Academic self-concept is a significant predictor of academic achievement (Lyon, 1993; Marsh et al., 1995; Wigfield & Karpathian, 1991). Research suggests that as much as one-third of the variance in achievement can be accounted for by academic self-concept alone (Lyon). Furthermore, positive self-concept appears to be linearly related to subsequent academic achievement (Marsh et al.), although a flow of causality for this relationship has
not been established. Previous literature suggests that underachievers often exhibit low self-concept or low self-perceptions (Bruns, 1992; Diaz, 1998; Dowdall & Colangelo, 1982; Ford, 1996; Supplee, 1990; Whitmore, 1980), although some research refutes the assertion that underachievers have poor academic self-concepts (Holland, 1998).

**Attitudes toward school.** Attitudes toward school consist of the students’ self-reported interest in and affect toward school. Previous research suggests that underachievers display negative attitudes toward school (Bruns, 1992; Diaz, 1998; Ford, 1996; Frankel, 1965; Mandel & Marcus, 1988; McCall, Evahn, & Kratzer, 1992; Rimm, 1995). “Research findings over many years have consistently indicated that young people who do well in school tend to be interested in learning” (Weiner, 1992, p. 260). Underachievers exhibit more negative attitudes toward school than average and high achievers do (Mandel & Marcus). Majoribanks (1992) found that children’s cognitive attitudes toward school demonstrated moderate, statistically significant associations with achievement. Interestingly, in his study, affective attitudes toward school and achievement were correlated for girls, but not for boys. As with academic self-concept, although there appears to be a relationship between attitudes toward school and achievement, this relationship does not suggest or determine any flow of causality between the two variables.

**Attitudes toward teachers and classes.** Students’ interest in their coursework is related to their use of self-regulatory strategies and their motivation (Scheifele, 1991; Wigfield, 1994). In addition, teachers’ personality and organization may affect students’ achievement (Peters, Grager-Loidl, & Supplee, 2000). Many underachievers also exhibit problems with authority, including problems with teachers and school personnel (Mandel & Marcus, 1988; McCall et al., 1992), and they may exhibit hostility toward authority figures, including teachers (Mandel & Marcus). Therefore, we expect students’ attitudes toward their teachers and courses and their academic achievement to exhibit a positive relationship.

**Motivation and self-regulation.** Recent developments in the field of motivation research suggest that self-regulation may hold the key to understanding student achievement. Self-regulation refers to students’ “self-generated thoughts, feelings, and actions which are systematically oriented toward the attainment of goals” (Zimmerman, 1994, p. ix). Self-regulation comprises processes by which people are metacognitively, motivationally, and behaviorally active participants in their own learning (Zimmerman). Self-regulated learning encompasses three components: metacognitive strategies, self-management and control of effort, and cognitive strategy use (Pintrich & DeGroot, 1990). Self-regulation is a significant predictor of academic achievement, and the use of internalized self-regulatory strategies help individuals to achieve in school. However, “knowledge of cognitive and metacognitive strategies is usually not enough to promote student achievement; students also must be motivated to use the strategies as well as regulate their cognition and effort” (Pintrich & DeGroot, p. 33). Unfortunately, disentangling the constructs of motivation and self-regulation has proven challenging. Underachievers may lack motivation, self-regulation skills, or a combination of the two traits. Underachievers may possess knowledge of self-regulatory strategies; however, they may not understand that the effortful use of self-regulatory strategies results in achievement (Borkowski & Thorpe, 1994).

**Goal valuation.** Eccles’ general expectancy-value model of motivation posits a value component of self-regulated learning. This value component includes goals and beliefs about the importance and interest of the task (Pintrich & DeGroot, 1990). Achievement values encompass the perceived enjoyment, perceived importance, and potential usefulness of a task (Wigfield & Karpathian, 1991). Children’s achievement values are a crucial motivational mediator of their academic self-regulation: When students value the goals of school, they are more likely to engage in academics, expend more effort on their schoolwork, and do better academically (Pintrich & DeGroot; Wigfield, 1994).

In this study, we investigated the relationship of academic self-perception, attitudes toward school, attitudes toward teachers and classes, motivation and self-regulation, and goal valuation with student achievement. Specifically, we were interested in determining whether low scores on these factors were more indicative of gifted underachievers than of gifted achievers.

**Research Questions**

The research questions for the study were as follows:

1. Are there mean differences between gifted achievers and gifted underachievers on academic self-perceptions, attitudes toward school, attitudes toward teachers, motivation and self-regulation, and goal valuation?
2. Which set of the above factors best predicts a student’s group membership as either a gifted high achiever or a gifted underachiever?
**Table 1**

**SAAS-R Factors, Sample Questions, Number of Questions, and Alpha Reliabilities of the SAAS-R Subscales**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Sample Question</th>
<th>Number of Questions</th>
<th>Cronbach’s Alpha for this study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Self-Perceptions</td>
<td>I can grasp complex concepts at school.</td>
<td>8</td>
<td>.89</td>
</tr>
<tr>
<td>Attitudes Toward School</td>
<td>This school brings out the best in me.</td>
<td>7</td>
<td>.89</td>
</tr>
<tr>
<td>Attitudes Toward Teachers</td>
<td>My teachers make learning interesting.</td>
<td>8</td>
<td>.95</td>
</tr>
<tr>
<td>Motivation</td>
<td>I am self-disciplined about completing my schoolwork.</td>
<td>11</td>
<td>.94</td>
</tr>
<tr>
<td>Goal Valuation</td>
<td>It’s important for me to do well in school.</td>
<td>7</td>
<td>.95</td>
</tr>
</tbody>
</table>

**Methodology**

**Sample and Procedures**

The sample consisted of 178 gifted high school students in grades 9–12 from 28 school districts across the nation. This was a convenient sample of school district volunteers, and it is not necessarily representative of high schools nationwide. A contact person at each of the 28 high schools coordinated the collection of the surveys and student information. The district contact people used the following definition to identify achieving and underachieving gifted students in their districts: Gifted achievers were in the top 10% of their class or had at least a 3.75 GPA; gifted underachievers were in the bottom half of their high school class or had a GPA at or below 2.5. Both groups had an IQ or achievement score at or above the 92nd percentile. According to these criteria, the sample contained 56 gifted underachievers and 122 gifted achievers. While these definitions are not universally accepted, they allowed us to examine two distinct groups of students: those who were, by conventional standards, succeeding in school, and those who were not achieving at a level commensurate with their “expected” abilities. Many of the students in the sample had been identified for gifted programs in elementary school.

The sample consisted of 101 males, 72 females, and 5 students who did not indicate their sex. Although the sex ratio of male to female achievers was roughly equal, there were approximately three times as many male underachievers as there were female underachievers in this sample. This is consistent with previous research on gender differences in underachievement (Peterson & Colangelo, 1996; Wolfe, 1991). The sample consisted of 20 freshmen, 50 sophomores, 53 juniors, 50 seniors, and 5 students who did not indicate their grade level. The majority of the participants in the study identified themselves as White (78%). In addition, 3% of the participants were Latino, 2% were African American, 3% were Asian or Pacific Islander, 12% chose not to respond to the ethnicity question, and 2% self-reported another ethnicity.

Once the contacts from the school districts identified gifted achievers and underachievers, they facilitated the distribution and collection of the informed consent forms with the students’ parents or guardians. Then, the identified students completed the School Attitude Assessment Survey–R (SAAS-R). The district contact person assigned students confidential codes and provided us with the results of the SAAS-R and results of a nationally normed, standardized achievement test score to verify the students’ high potential for academic achievement. In addition, the district contact person provided the students’ cumulative and semester GPAs and their current class rank. This information confirmed each student’s classification as either a gifted low achiever or a gifted high achiever.

**Instrumentation**

The School Attitude Assessment Survey–R (McCoach, 2000) contains 43 items designed to measure the five factors of interest in this study: academic self-perceptions, attitudes toward school, attitudes toward teachers and classes, motivation and self-regulation, and goal valuation. The instrument utilizes a seven-point Likert agreement scale ranging from strongly disagree to strongly agree. A previous study (McCoach & Siegle, 2001) provided evidence of the construct validity and reliability of the instrument for research on students’ attitudes toward school. In this study, as in the validation study, all reliability coefficients for the individual factors were above .88.

Table 1 contains sample questions from each of the five factors of the SAAS-R, as well as the reliability coefficients for each of the five subscales. The score for each subscale...
represents the mean item scores on the given subscale and ranges from 1 to 7.

The academic self-perceptions factor of the SAAS-R measures students’ perceptions of their scholastic abilities. The items measure students’ self-perceived competency in school (Marsh, Craven, & Debus, 1999). In keeping with Harter’s (1985) conception of academic self-perceptions, the self-perception factor is a cognitive, self-evaluative appraisal of the student’s scholastic ability, rather than an assessment of self-esteem (Pintrich & Schunk, 1996) or an affective, interest-based judgment of academics (Marsh et al., 1999). The attitudes toward school factor measures students’ self-reported satisfaction with their school environments by measuring the intensity of their positive or negative affect for or against school and objects associated with school. Because it is difficult to separate the confounding effects of attitudes toward teachers and attitudes toward the classes they teach, the attitudes toward teachers factor encompasses students’ interest and positive affect toward both their teachers and their classes. The motivation/self-regulation factor measures students’ self-reported effort and use of self-regulatory strategies, as well as their self-reported motivation. Students who are high on this factor should exhibit self-control, strong organizational skills, self-motivation, task commitment, conscientiousness, persistence, and work ethic. The goal valuation factor measures the importance that a student attaches to scholastic achievement, that is, whether or not the student values the goals of school. Table 2 contains the correlations among the five subscales of the SAAS-R.

**Results**

Several analyses explored the differences in achievers’ and underachievers’ academic self-perceptions, attitudes toward school, attitudes toward teachers, motivation/self-regulation, and goal valuation. First, we conducted a series of five t-tests to compare the means of gifted achievers and gifted underachievers on each of the five factors. To control the Type I error rate, we used a Bonferroni adjustment, setting the alpha at .01. To test for equality of variances between the two groups, we ran a Levene’s test. Only the attitudes toward teachers factor demonstrated equal variances between the two groups. Therefore, for all other factors, corrections were applied to compensate for the inequality of the variances. In these cases, the gifted underachievers displayed greater variances than the gifted achievers. The mean differences between gifted achievers’ and gifted underachievers’ attitudes toward school, attitudes toward teachers, motivation/self-regulation, and goal valuation were all statistically significant (p < .001). The effect sizes for these differences were large, ranging from .75 standard deviation units for the attitudes toward school subscale to 1.37 standard deviation units for the motivation/self-regulation subscale. The differences observed on the academic self-perceptions factor between the two groups were not statistically significant (p > .01). Both gifted achievers and gifted underachievers exhibited high academic self-perceptions. The mean academic self-perceptions factor score for gifted underachievers was 5.9, while the mean academic self-perceptions factor score for gifted high achievers was 6.2. The effect size for this difference was .46 standard deviation units, which, according to Cohen’s (1988) guidelines, is considered a small effect. The largest mean differences between gifted achievers and gifted underachievers occurred on the motivation/self-regulation factor and the goal valuation factors. Table 3 reports the results of this analysis.

Next, we conducted a series of logistic regression analyses to determine which combination of the five factors would allow us to best predict students’ group membership. Logistic regression is a statistical technique that is often used to predict group membership from a set of predictor variables. Using logistic regression techniques, researchers can assess a model’s ability to classify correctly cases for whom group membership or outcome status is known (Tabachnik...
Table 3

*T*-tests on Each of the Five Factors on the SAAS-R

<table>
<thead>
<tr>
<th>Factors</th>
<th>Achievers (n = 122)</th>
<th>Underachievers (n = 56)</th>
<th>p</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Academic Self-Perception</td>
<td>6.21</td>
<td>.565</td>
<td>5.86</td>
<td>.946</td>
</tr>
<tr>
<td>Attitudes Toward School</td>
<td>5.25</td>
<td>1.16</td>
<td>4.22</td>
<td>1.52</td>
</tr>
<tr>
<td>Attitudes Toward Teachers</td>
<td>5.41</td>
<td>.869</td>
<td>4.66</td>
<td>.975</td>
</tr>
<tr>
<td>Motivation/Self-Regulation</td>
<td>5.48</td>
<td>.931</td>
<td>3.90</td>
<td>1.40</td>
</tr>
<tr>
<td>Goal Valuation</td>
<td>6.53</td>
<td>.575</td>
<td>5.26</td>
<td>1.41</td>
</tr>
</tbody>
</table>

Table 4

Results of the Logistic Regression With All Five Predictor Variables

<table>
<thead>
<tr>
<th>Predictor Variable</th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>df</th>
<th>Sig</th>
<th>R</th>
<th>Exp (B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Self-Perceptions</td>
<td>-.03</td>
<td>.30</td>
<td>.007</td>
<td>1</td>
<td>.93</td>
<td>.00</td>
<td>.98</td>
</tr>
<tr>
<td>Attitudes Toward School</td>
<td>.25</td>
<td>.19</td>
<td>1.75</td>
<td>1</td>
<td>.19</td>
<td>.00</td>
<td>1.29</td>
</tr>
<tr>
<td>Attitudes Toward Teachers</td>
<td>.01</td>
<td>.28</td>
<td>.002</td>
<td>1</td>
<td>.96</td>
<td>.00</td>
<td>1.01</td>
</tr>
<tr>
<td>Motivation/Self-Regulation</td>
<td>.65</td>
<td>.25</td>
<td>6.53</td>
<td>1</td>
<td>.01</td>
<td>.14</td>
<td>1.91</td>
</tr>
<tr>
<td>Goal Valuation</td>
<td>.76</td>
<td>.30</td>
<td>6.23</td>
<td>1</td>
<td>.01</td>
<td>.14</td>
<td>2.13</td>
</tr>
</tbody>
</table>

Table 5

Results of the Logistic Regression With Two Predictor Variables

<table>
<thead>
<tr>
<th>Predictor Variable</th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>df</th>
<th>Sig</th>
<th>R</th>
<th>Exp (B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivation/Self-Regulation</td>
<td>.75</td>
<td>.24</td>
<td>9.96</td>
<td>1</td>
<td>.001</td>
<td>.19</td>
<td>2.11</td>
</tr>
<tr>
<td>Goal Valuation</td>
<td>.76</td>
<td>.30</td>
<td>6.46</td>
<td>1</td>
<td>.011</td>
<td>.14</td>
<td>2.14</td>
</tr>
</tbody>
</table>

& Fidell, 2001). The model with all five subscales correctly classified 81.8% of the students as either gifted achievers or gifted underachievers. Table 4 reports the results of this analysis. However, because of multicollinearity among the five factors, the Wald test revealed that only two of the five factors (motivation/self-regulation and goal valuation) were statistically significant predictors of group membership. Academic self-perceptions, attitudes toward school, and attitudes toward teachers were not significant predictors of classification status in the logistic regression model (p > .10). Therefore, we re-estimated the model with two independent variables: goal valuation and motivation/self-regulation. The model chi-square ($\chi^2$) was 66.1 with 2 df. The model chi-square is the difference between the $-2 \log$-likelihood of the null or constant only model and the $-2 \log$-likelihood of the model with the set of predictors and tests the null hypothesis that the all of the regression coefficients in the model are 0 (Cizek & Fitzgerald, 1999). This chi-square was statistically significant, suggesting that the values of the coefficients in the model were statistically significantly different from 0. The Cox and Snell $R^2$ was .313. The Nagelkerke $R^2$ was .439. These pseudo-$R^2$ measures are somewhat analogous to $R^2$ in linear regression and indicate the proportional reduction in chi-square over the null model (Menard, 1995). A larger value of the $R^2$ is desirable in that it indicates that the model reduces the chi-square by a larger amount. These results indicate that the two-factor model classified students as underachievers or achievers significantly better than the null model did. Table 5 reports the results of this analysis.
Using the motivation/self-regulation and goal valuation factors as predictors of achievers and underachievers allowed us to correctly classify 81.8% of the sample as either gifted achievers or gifted underachievers. We were better able to classify achievers (91.7% correctly classified) than gifted underachievers (60.7% correctly classified). It was more difficult to classify gifted underachievers because their responses exhibited much greater variances than those of the gifted achievers. We explore this further in the discussion section. The results of the logistic regression indicate that, for every point lower a student scored on the motivation factor, he or she was more than twice as likely to be an underachiever after controlling for the goal valuation factor. For every point lower a student scored on the goal valuation factor, he or she was more than twice as likely to be an underachiever after controlling for the motivation/self-regulation factor.

Discussion

Both gifted achievers and gifted underachievers possess high academic self-perceptions. Much of the literature on underachievement suggests that underachievers have low self-esteem, poor academic self-concepts, or low self-efficacy (Bricklin & Bricklin, 1967; Bruns, 1992; Diaz, 1998; Dowdall & Colangelo, 1982; Fine & Pitts, 1980; Fink, 1965; Ford, 1996; Kanoy, Johnson, & Kanoy, 1980; Supplee, 1990; Whitmore, 1980). The results of this study challenge the notion that gifted underachievers suffer from low academic self-perceptions. However, most of the previous literature examining the self-concepts of gifted underachievers utilized either qualitative or case study methodology. Another notable exception, a quantitative study of gifted underachievers conducted by Lupart and Pyryt (1996), found that gifted underachievers resembled their average peers on measures of self-esteem. The contrasting results in the qualitative and quantitative studies suggest that, although low academic self-perceptions may be characteristic of some gifted underachievers, it is not necessarily characteristic of the majority of gifted underachievers. Most gifted students in both the achieving and underachieving groups had high mean scores on the academic self-perceptions scale. For example, more than 50% of the gifted underachievers had means of at least 6.0 on the academic self-perceptions scale (1–7), and less than 11% of gifted underachievers had mean scores of less than 5.0. In comparison, almost 62% of gifted high achievers exhibited scores of 6.0 or higher on the academic self-perceptions factor, and less than 4% scored less than 5.0 on the scale. Therefore, although underachieving gifted students were more likely than gifted achievers to report low academic self-perceptions, those with low academic self-perceptions represented a small minority of the gifted underachievers.

Perhaps both gifted underachievers and gifted achievers have high academic self-perceptions because both groups know that they possess the cognitive skills and abilities to be successful in school. In addition, social comparison theory may help to explain why gifted underachievers are able to preserve such a high sense of academic self-concept in the face of academic failure (Marsh, 1987). Although gifted underachievers’ achievement may lag behind that of their more successful peers, perhaps gifted underachievers compare their innate abilities with those of their classmates. Consequently, these students feel confident in their academic abilities despite their low academic achievement.

The finding that academic self-concept does not efficiently separate gifted achievers from gifted underachievers stands in stark contrast to previous research in this field, as well as our previous results for the general population of high school students (McCoach & Siegle, 2001). In a related study, we examined the relationship of the five factors to self-reported GPA with a heterogeneous population of high school students. Academic self-perceptions was the factor that most effectively separated students with self-reported high GPAs from those with low self-reported GPAs, and the academic self-perceptions factor was the best predictor of self-reported high school GPA. In that study, for every point higher a student scored on academic self-perceptions, he or she was over four times more likely to be a high achiever after controlling for the effects of the motivation/self-regulation factor (McCoach & Siegle, 2001). In addition, the academic self-perceptions factor alone explained 21% of the variance in self-reported GPA (McCoach & Siegle). We hypothesize that, although underachievers in general may tend to exhibit poor academic self-perceptions, gifted underachievers are less prone to this problem because of their high intellectual ability. In other words, high academic ability acts as a protective factor against low academic self-perceptions.

Gifted achievers exhibited more positive attitudes toward teachers and more positive attitudes toward school than gifted underachievers. However, these factors did not aid significantly in the classification of gifted students as either high achievers or underachievers after controlling for the goal valuation and motivation/self-regulation factors. The attitudes toward school and the attitudes toward teachers factors were moderately correlated with the moti-
vation/self-regulation and the goal valuation factors. These relationships are expected, since students with more positive attitudes toward school and teachers are more likely to value the goals of school and put forth effort to achieve those goals. In addition, motivated students are more likely to receive positive feedback from the school and teachers, thereby improving their feelings about school and teachers. However, it appears that the predictive power of attitudes toward school and attitudes toward teachers to classify students as either achievers or underachievers is redundant once the goal valuation and motivation/self-regulation factors are entered into the logistic regression equation. Because this data is correlational in nature, it is impossible to ascertain whether students’ attitudes toward school and teachers exert influence on goals and motivations, whether students’ goals and motivations influence their attitudes toward school and teachers, whether these factors are engaged in a pattern of reciprocal causation, or whether the correlations among these factors are caused by factors that are unaccounted for by the present model.

Gifted achievers and gifted underachievers differed substantially in their motivation and goal valuation mean scores. In addition, the goal valuation and motivation factors were highly correlated with each other, suggesting a strong relationship between a student’s goals and his or her motivation/self-regulation to achieve those goals. We suspect that goal valuation is a precursor to motivation and self-regulation. In other words, when students value academic goals, they become motivated to achieve scholastically. This motivation promotes the development of self-regulation skills to achieve their academic goals. When students do not espouse academic goals, they are less likely to exert effort to achieve academically. The greatest mean difference between gifted achievers and gifted underachievers was in motivation/self-regulation. The mean score of the gifted achievers was over 1.5 points higher than that of the gifted underachievers. In addition, the combination of motivation/self-regulation factor and the goal valuation factors allowed us to classify correctly over 81% of the sample as either gifted high achievers or gifted underachievers. Previous research also indicated that the motivation/self-regulation factor was one of the best predictors of academic achievement, explaining 19% of the variance in self-reported GPA (McCoach & Siegle, 2001). These results suggest that using the goal valuation and motivation self-regulation factors of the SAAS-R may help teachers and counselors to identify gifted students who are at risk of underachieving in secondary school. Furthermore, the results of this study suggest that the key features that distinguish gifted achievers from gifted underachievers are the goals they set for themselves and the effort they put forth to achieve those goals. Teachers and counselors who work with gifted underachievers should assess whether gifted underachievers value the goals of school and whether they are motivated to attain those goals. Students must either value the work they have been given or value the outcome (extrinsic rewards) of that work. If they value neither the task nor the outcome, they will not possess the motivation to put forth their best effort when completing the task. We believe that many students underachieve because they find no intrinsic or extrinsic benefits to school. Therefore, interventions for bright underachievers should include goal setting and future planning activities. In addition, interventions that make classes more enjoyable and intrinsically motivating for students may help to reverse academic underachievement.

Underachievers had significantly higher standard deviations than gifted achievers on all but the attitudes toward teacher factors. In other words, gifted achievers respond much more similarly to each other than gifted underachievers do. Therefore, gifted achievers appear to be a much more homogeneous group with respect to the four factors of general academic self-perceptions, attitudes toward school, motivation and self-regulation, and goal valuation than are underachievers. The large amount of variability in the sample of underachievers suggests that gifted underachievers may or may not exhibit depressed mean scores on these factors. While our results suggest that, in general, underachievers share some common characteristics, the great variability in the responses of the underachievers suggests that they are not a homogeneous group of students. We hypothesize that each gifted student may underachieve for a somewhat unique combination of reasons, including factors not discussed here. Therefore, it is possible that gifted underachievers may exhibit low scores on only one or two of the factors and average or even high scores on other factors. For example, a gifted underachiever might not value the goals of school, but have high academic self-perception and a positive attitude toward his or her teacher and school.

One limitation of this study is that it focused exclusively on personal characteristics associated with underachievement. We did not screen any of the students for evidence of learning disabilities, ADHD, or other medical, emotional, or psychological problems. As we mentioned earlier, academic underachievement can sometimes be indicative of a more serious physical, mental, or emotional issue such as a learning disability, ADHD, a hearing impairment, or a nontraditional learning style (Moon & Hall,
five interventions for Marcus, 1988; Therefore, we recommend that school personnel screen underachieving gifted students for a wide variety of physical, mental, and emotional problems before treating the underachievement as the primary focus of their intervention.

**Future Research**

Future research should examine whether interventions to reverse underachievement can increase students’ motivation/self-regulation and whether increased student motivation translates directly into increased academic achievement. In addition, it would be interesting to contrast the scores of gifted achievers and gifted underachievers to those of nongifted achievers and nongifted underachievers to determine whether the same relationships and mean differences hold in both gifted and nongifted populations. Future research should also begin to explore the causal relationships between these five factors and academic achievement by collecting longitudinal data on gifted achievers and underachievers as they progress through secondary school. Researchers could also utilize structural equation modeling techniques to model the complex, reciprocal relationships among the personal, school, and environmental variables related to scholastic achievement and underachievement.

Finally, future research could use this and other instruments to try to document quantitatively the existence of different subtypes of gifted underachievers. Several authors have posited the existence of several various types of underachievers (Heacox, 1991; Mandel & Marcus, 1988; Reis & McCoach, 2000; Rimm, 1995; Schneider, 1998). There was a great deal of variability in the underachievers’ mean scores for the five factors. Therefore, future research should examine whether the five factors on the SAAS-R can be used to help classify the underachievers into various categories. Perhaps these classification schemes can be used to develop differential interventions for gifted underachievers.

**Conclusions and Educational Implications**

This study represents an attempt to examine quantitatively factors related to the underachievement of gifted students. One surprising finding was that both gifted achievers and gifted underachievers exhibited high academic self-perceptions. These results contradict the majority of previous research on underachievement. Gifted achievers and gifted underachievers differed on the attitudes toward school, attitudes toward teachers, motivation/self-regulation, and goal valuation factors. Goal valuation and motivation/self-regulation helped differentiate gifted achievers from gifted underachievers with greater than 81% accuracy, using logistic regression techniques.

This study represents an important step toward quantifying factors related to the underachievement of gifted adolescents. Future research should continue to explore factors that are related to gifted students’ academic achievement. Our hope is that, by identifying a variety of factors that are related to the achievement and underachievement of gifted students, we will be able to design a variety of interventions to help reverse the academic underachievement of many gifted secondary students in school settings.

**References**


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