

THE SCHOOL ATTITUDE ASSESSMENT SURVEY–REVISED:
A NEW INSTRUMENT TO IDENTIFY ACADEMICALLY
ABLE STUDENTS WHO UNDERACHIEVE

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The purpose of this study was to design a psychometrically sound instrument to measure adolescents' attitudes toward school, attitudes toward teachers, goal-valuation, motivation, and general academic self-perceptions that could be used to explore the underachievement of academically able secondary school students. The final School Attitude Assessment Survey–Revised (SAAS-R) instrument consisted of 35 questions, each of which being an indicator of one of the five factors. The final model exhibited reasonable fit, $\chi^2(550) = 1,581.7$, Comparative Fit Index = .91, Tucker Lewis Index = .92, root mean square error of approximation = .059, standardized root mean squared residual = .057. The scores in this study showed internal consistency reliability coefficient of at least .85 on each of the five factors. In addition, four of the five factors of the SAAS-R appear to differentiate gifted achievers from gifted underachievers. It is the authors' hope that the SAAS-R will allow researchers to more fully understand the relationship between these five factors and underachievement in gifted and nongifted populations.

Keywords: underachievement; instrument validation; motivation; gifted underachiever; high school students

Every teacher knows at least one student who “could do better”: students who come to school without books or homework, students who appear to choose not to study for exams, students who seem unfazed by parents' and teachers' pleas that their grades now will affect the rest of their professional lives. We commonly dub these students *underachievers*.

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Underachievement is most commonly defined as a discrepancy between potential (or ability) and performance (or achievement) (Reis & McCoach, 2000). Therefore, a student who appears capable of succeeding in school but is nonetheless struggling is often referred to as an underachiever. Factors commonly associated with underachievement include low academic self-concept (Schunk, 1998; Supplee, 1990; Whitmore, 1980), low self-motivation (Weiner, 1992), low goal valuation (McCall, Evahn, & Kratzer, 1992), and negative attitude toward school and teachers (Colangelo, Kerr, Christensen, & Maxey, 1993; Ford, 1996; Rimm, 1995). Most of the literature on underachievement suggests that underachievers have lower academic self-perceptions, lower self-motivation and self-regulation, less goal-directed behavior, and more negative attitudes toward school than high achievers do (Reis & McCoach, 2000). However, the majority of research investigating the common characteristics of underachieving students has employed qualitative, clinical, or single-subject research methodology. Very few large-scale quantitative studies have examined the legitimacy of these hypotheses (Reis & McCoach, 2000). Perhaps so few researchers have examined the phenomenon of underachievement quantitatively because there are no adequately validated, published instruments designed specifically for this purpose.

The present study represents an attempt to develop an instrument to more fully probe the issues surrounding the underachievement of able adolescents. The purpose of this study is to design a psychometrically sound instrument to measure adolescents' attitudes toward school, attitudes toward teachers, goal-valuation, motivation, and general academic self-perceptions that can be used to explore the underachievement of secondary school students. Our goal was to design an instrument that can be used to compare heterogeneous groups of achievers and underachievers as well as achievers and underachievers from a population of academically gifted students.

Background

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 our research, we have chosen the following definition of underachievers:

Underachievers are students who exhibit a severe discrepancy between *expected achievement* [italics added] (as measured by standardized achievement test scores or cognitive or intellectual ability assessments) and *actual achievement* [italics added] (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. (Reis & McCoach, 2000, p. 157)

Factors Associated With Underachievement

Researchers have attempted to isolate the psychological factors that appear to be correlated with underachievement. Characteristics commonly associated with underachievement include low academic self-perceptions, negative attitude 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 and involves 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, 1996). 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.

Academic self-concept is a significant predictor of academic achievement (Lyon, 1993; Marsh, Chessor, Craven, & Roche, 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, 1993). Furthermore, positive self-concept appears to be linearly related to subsequent academic achievement (Marsh et al., 1995), 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).

Attitude toward teachers and classes. 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, 1988). Students' interest in their coursework is related to their use of self-regulatory strategies as well as their motivation (Schiefele, 1991; Wigfield, 1994). Therefore, we expect students' attitudes toward their teachers and courses, their scores on the motivation/self-regulation factor, and their academic achievement to exhibit a positive relationship.

Attitudes toward school. Attitudes toward school consist of the students' self-reported interest in and affect toward school. Previous research suggests that underachievers appear to display negative attitudes toward school (Bruns, 1992; Diaz, 1998; Ford, 1996; Frankel, 1965; Mandel & Marcus, 1988; McCall et al., 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, 1988). 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 attitude toward school and achievement, this relationship does not suggest or determine any flow of causality between the two variables.

Goal valuation. Children's goals and achievement values affect their self-regulation and motivation (Wigfield, 1994) because goals influence how children approach, engage in, and respond to achievement tasks (Hidi & Harackiewicz, 2000). When students value a task, they are more likely to engage in, expend more effort on, and do better on the task (Wigfield, 1994). Future goals play an important role in providing task value. Peterson (2000) followed achieving and underachieving gifted high school students into college. She found the achievers exhibit early decisiveness in their determination of a career direction, and she suggested that these goals may promote their achievement. Emerick (1992) reported that high school gifted underachieving students perceived themselves as able to reverse their underachievement by developing goals that were personally motivating and directly related to academic success.

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, 1994). Others suggested that 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 & De Groot, 1990, 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 not lack knowledge of strategies, but rather they may not understand that strategic behavior in conjunction with effort results in achievement (Borkowski & Thorpe, 1994).

Purpose

The purpose of this study is to validate scores from an instrument designed to measure academic self-perceptions, attitude toward school, attitudes toward teachers, goal valuation, and motivation/self-regulation in secondary school students. The instrument is designed to measure factors that may distinguish underachievers from achievers in a secondary school setting.

Methodology

Previous Research on a Prior Version of the Instrument

The School Attitude Assessment Survey–Revised (SAAS-R) represents the researchers' second attempt to quantify factors associated with the scholastic achievement and underachievement of adolescents. The previous version, the School Attitude Assessment Survey (SAAS), measured three of the five factors contained on the SAAS-R (academic self-perceptions, attitude toward school, and motivation). In addition, the original SAAS instrument measured an additional factor, peer attitudes toward school. The SAAS instrument employed a 7-point Likert-type agreement scale. The pilot version of the SAAS contained 45 questions and was validated using a convenient sample of 1,738 secondary school students from nine different schools in four states. Twenty of the 45 questions were retained in the final version of the SAAS. Each of the four factors contained 4 to 6 questions. The scores from the instrument seemed to exhibit reasonable fit for the hypothesized fac-

tor structure in the initial validation sample, $\chi^2(df = 162) = 1,013.4$, Tucker Lewis Index (TLI) = .95, Comparative Fit Index (CFI) = .96, root mean square error of approximation (RMSEA) = .058, standardized root mean squared residual (SRMR) = .035 (McCoach, 2002).

When the final, shortened 20-question version of the SAAS was administered to a new convenient sample of 420 ninth-grade students from a multi-ethnic high school in the South, the factor model fit in the cross-validation sample was also adequate, $\chi^2(df = 162) = 509.5$, $p < .001$, CFI = .94, TLI = .92, RMSEA = .075, SRMR = .045 (McCoach, 2002). The scores on the previous version showed internal consistency reliability coefficient of at least .80 on each of the factors in the initial and cross-validation samples. Furthermore, preliminary results suggested that the SAAS could separate approximately 90% of high grade point average (GPA) and low GPA students into the correct classifications. For more details about the original SAAS instrument, see McCoach (2002).

We felt that the initial SAAS instrument could be improved for several reasons. First, the motivation/self-regulation and the academic self-perception factors exhibited a very high correlation of approximately .80. Therefore, we decided to revise the 20-question version of the SAAS to provide stronger evidence of discriminant validity among the academic self-perceptions and motivation/self-regulation factors. In addition, the peer attitudes factor did not contribute any unique variance to the prediction of students as high or low achievers after controlling for the other three factors measured by the SAAS. Therefore, we decided to remove that factor and measure two other factors. First, we wanted to create a factor to measure students' valuing of the goals of school. Our belief was that students' valuing the goals of school represented a necessary prerequisite to their motivation to self-regulate and put forth effort to achieve in a scholastic environment. Second, we wanted to separate students' general attitudes toward school from their attitudes toward their teachers and classes. We felt that students might attribute positive affect to the school for social, athletic, or other reasons without actually having positive attitudes about their classes and teachers.

Validation Procedures

The goals of content validity are to clarify the domain of a concept and judge whether the measure adequately represents the domain (Bollen, 1989). After having conducted a thorough literature review, the researchers created item stems to measure students' academic self-perception, attitudes toward school, attitudes toward teachers and classes, goal valuation, and motivation/self-regulation. After generating lists of possible item stems, the researchers selected for inclusion items that met the following criteria: (a) The item appeared to measure one of the constructs, (b) the item did not appear to

directly or indirectly measure any of the other four constructs, (c) the item contained only one thought or main idea, and (d) the item was clearly written so that it could be easily understood by an average fifth grader or a person with a fifth-grade reading level.

We conducted the construct validation of the SAAS-R using a two-step process. First, we administered a pilot version of SAAS-R to 942 ninth-through twelfth-grade students from a mostly middle-class, suburban high school in the Northeast. The entire school agreed to complete the survey; therefore, the sample contained variability in terms of their grades, attitudes, and aspirations. Students completed the surveys anonymously, and the researchers collected no identifying information. This first version of the SAAS-R contained 48 questions, each of which was designed to measure one of the five factors. The SAAS-R employed a 7-point Likert-type agreement scale.

Using EQS 5.7 (Bentler & Wu, 1995), we conducted a confirmatory factor analysis. We evaluated model fit using several common fit indices including chi-square (χ^2), the ratio of chi-square to degrees of freedom (χ^2/df), RMSEA, CFI, TLI (also known as the Bentler-Bonett Non-Normed Fit Index), and SRMR. We specified a priori that each question was an indicator for only one factor. Examination of the standardized regression weights (pattern matrix), the standardized residual covariance matrix, the squared multiple correlations of the items, and the modification indices aided in the respecification of the model. We eliminated one question ("I think that I would do better in another school") because it had a factor pattern coefficient of less than .40 on its specified factor. In addition, after inspecting the modification indices, we eliminated 14 questions that appeared to be indicators of more than one factor, as evidenced by large chi-square change scores ($\chi^2\Delta > 40$) on the Lagrange multiplier test. We also eliminated one item that demonstrated several of the largest standardized residual covariances. Using this process, we eliminated 16 of the original 48 questions. In addition, we decided to remove two additional questions because we felt that they were vague and misleading. "I can learn new concepts quickly" was removed from the original pilot and was rewritten as "I can learn new ideas quickly in school." "The staff values me as a person" was removed and reworded as "My teachers care about me."

The final pilot version of the instrument consisted of 30 questions, each of which being an indicator for one of the five factors. All factor pattern coefficients were significantly different from zero and in the proper direction, and all factor correlations were significantly different from zero. The final model exhibited reasonable fit, $\chi^2(395) = 1,577.45$, CFI = .93, TLI = .93, RMSEA = .059, SRMR = .042. Although χ^2 was significant ($p < .001$), the χ^2 significance test is highly sensitive to sample size. The final instrument contained 5 questions on the Academic Self-Perceptions factor, 4 questions on the Atti-

tudes Toward Teachers factor, 4 questions on the Attitudes Toward School factor, 6 questions on the Goal Valuation factor, and 11 questions on the Motivation/Self-Regulation factor. The confirmatory factor analysis revealed that the Goal Valuation and Motivation/Self-Regulation factors were highly correlated ($r = .79$). The other factors exhibited moderate (.48 to .66), positive intercorrelations.

Reliability analysis indicated that the scores on the subscales showed internal consistency reliability coefficient of at least .80 on each of the five factors (0.82 for the 5-item Academic Self-Perceptions subscale, 0.88 for the 4-item Attitude Toward Teachers subscale, 0.85 for the 4-item Attitude Toward School subscale, 0.92 for the 6-item Goal Valuation subscale, and 0.94 for the 11-item Motivation/Self-Regulation subscale).

We were concerned by the low numbers of items on the Academic Self-Perceptions, Attitudes Toward Teachers, and Attitudes Toward School subscales. Therefore, in addition to rewording the two questions mentioned above, we wrote 11 new questions. For the Academic Self-Perceptions factor and the Attitudes Toward Teachers factor, we wrote three new questions and reworded one question; we wrote three new questions for the Attitudes Toward School factor. In addition, we wrote one new question each for the Goal Valuation factor and the Motivation/Self-Regulation factor. This modified version of the SAAS-R contained the 30 validated items and the 13 new and newly worded items.

We collected additional data from three different convenience samples. We sampled a group of rising juniors and seniors in a competitive summer program for talented high school students on a university campus ($n = 146$). For this sample, approximately two thirds of the students were female; one third were male. Approximately 16% of the sample consisted of African American students, 9% were Latino American students, and 7% were Asian American students. In addition, we sampled ninth-grade students attending a multiethnic urban high school in the Northeast ($n = 200$). Approximately 57% of the sample was Latino American, and 18% of the sample was African American. Approximately 56% of these students were female, 40% were male, and 4% did not indicate their gender on the survey. Finally, we collected information from a national sample of academically able achieving and underachieving high school students from 27 different school districts nationwide ($n = 299$). Our sample was 53% male and 47% female. Within the sample, 35% of the students were seniors, 26% were juniors, 27% were sophomores, and 10% were freshmen. This subsample of students was predominantly (70%) White; 8% of the sample was African American, and 4% of the sample was Latino American. Approximately 64% of these students scored at or above the 95th percentile nationally on a norm-referenced standardized achievement test.

To examine the psychometric qualities of the revised instrument, we subjected the instrument to another confirmatory factor analysis. The sample size for this analysis was 645 students; however, only the data of 537 complete cases were used for the confirmatory factor analysis. In this analysis, we sequentially eliminated 8 of the 43 items. After eliminating each item, a new confirmatory factor analysis was conducted. The reasons for elimination of these eight items were mainly (a) an item showed large standardized residual, (b) the modification index suggested that an item behaved as an indicator for more than one factor, (c) content duplication, and (d) item score has very little variability. Of the eight questions that were eliminated from the instrument, two (Questions 39 and 43) were newly written questions, and six (Questions 4, 5, 11, 15, 22, and 23) were questions that had appeared on the original pilot of the SAAS-R.

The final SAAS-R instrument consisted of 35 questions. Of these final 35 questions, 24 were questions from the original pilot version, 2 were reworded questions, and 9 were newly written questions. Each of the 35 items functioned as an indicator of its hypothesized factors. All factor pattern coefficients were significantly different from zero and in the proper direction, and all factor correlations were significantly different from zero. The final model exhibited reasonable fit, $\chi^2(550) = 1,581.7$, CFI = .911, TLI = .918, RMSEA = .059, SRMR = .057. The final instrument contained 8 questions on the Academic Self-Perceptions factor, 7 questions on the Attitudes Toward Teachers factor, 5 questions on the Attitudes Toward School factor, 6 questions on the Goal Valuation factor, and 10 questions on the Motivation/Self-Regulation factor. Table 1 reports the item stems and structure and pattern coefficients for the five factors on the final version of the SAAS-R.

Factors 4 (Goal Valuation) and 5 (Motivation/Self-regulation) were still highly correlated ($r = .741$), although this correlation was slightly lower than it had been on the pilot form of the SAAS-R. This high intercorrelation results in large structure coefficients for Factor 5's items on Factor 4, as well as large structure coefficients for Factor 4's items on Factor 5. The high correlation between Goal Valuation and Motivation/Self-Regulation is somewhat troubling from a discriminant validity point of view; however, it is not unexpected theoretically. Valuing the goals of school can be seen as a necessary precursor to putting forth motivation and using self-regulatory strategies to achieve those goals. Therefore, we believe that students who do not value the goals of school will be less likely to put forth effort to achieve those goals. However, students who do value the goals of school may or may not put forth the necessary effort and use self-regulatory strategies to achieve those goals. Therefore, we see these two factors as moderately to highly correlated, yet distinct components of a student's achievement orientation.

The other factors exhibited moderate (.30 to .65), positive intercorrelations. The scores in this study demonstrated a classical theory internal con-

Table 1
Factor Pattern and Structure Coefficients for Each of the Five Factors on the Final Version of the School Attitude Assessment Survey--Revised (SAAS-R)

Variable	Factor Pattern					Factor Structure				
	ASP	ATT	ATS	Goals	MOT/S-R	ASP	ATT	ATS	Goals	MOT/S-R
2. I am intelligent.	.631	.000	.000	.000	.000	.631	.229	.168	.232	.214
3. I can learn new ideas quickly in school.	.733	.000	.000	.000	.000	.733	.267	.195	.269	.248
13. School is easy for me.	.582	.000	.000	.000	.000	.582	.212	.155	.214	.197
20. I can grasp complex concepts in school.	.681	.000	.000	.000	.000	.681	.248	.181	.250	.231
37. I am capable of getting straight As.	.628	.000	.000	.000	.000	.628	.229	.167	.230	.213
40. I am good at learning new things in school.	.799	.000	.000	.000	.000	.799	.291	.213	.293	.271
41. I am smart in school.	.802	.000	.000	.000	.000	.802	.292	.213	.294	.272
1. My classes are interesting.	.000	.702	.000	.000	.000	.256	.702	.423	.356	.456
9. I relate well to my teachers.	.000	.686	.000	.000	.000	.250	.686	.414	.348	.446
14. I like my teachers.	.000	.776	.000	.000	.000	.282	.776	.468	.393	.504
16. My teachers make learning interesting.	.000	.839	.000	.000	.000	.305	.839	.506	.425	.545
17. My teachers care about me.	.000	.704	.000	.000	.000	.256	.704	.425	.357	.458
31. Most of the teachers at this school are good teachers.	.000	.711	.000	.000	.000	.259	.711	.429	.360	.462
34. I like my classes.	.000	.788	.000	.000	.000	.287	.788	.475	.400	.512
6. I am glad that I go to this school.	.000	.000	.883	.000	.000	.235	.532	.883	.309	.395
7. This is a good school.	.000	.000	.858	.000	.000	.228	.517	.858	.294	.384
12. This school is a good match for me.	.000	.000	.822	.000	.000	.219	.496	.822	.282	.367
19. I like this school.	.000	.000	.575	.000	.000	.153	.347	.575	.197	.257
42. I am proud of this school.	.000	.000	.831	.000	.000	.221	.501	.831	.285	.371

(continued)

Table 1 (conitnued)

Variable	Factor Pattern					Factor Structure				
	ASP	ATT	ATS	Goals	MOT/S-R	ASP	ATT	ATS	Goals	MOT/S-R
18. Doing well in school is important for my future career goals	.000	.000	.000	.757	.000	.278	.384	.260	.757	.561
21. Doing well in school is one of my goals.	.000	.000	.000	.849	.000	.312	.430	.291	.849	.629
25. It's important to get good grades in school.	.000	.000	.000	.826	.000	.303	.419	.283	.826	.612
28. I want to do my best in school.	.000	.000	.000	.558	.000	.205	.283	.191	.558	.413
29. It is important for me to do well in school.	.000	.000	.000	.907	.000	.333	.460	.311	.907	.672
38. I want to get good grades in school.	.000	.000	.000	.846	.000	.310	.429	.290	.846	.627
8. I work hard at school.	.000	.000	.000	.000	.858	.291	.558	.384	.636	.858
10. I am self-motivated to do my schoolwork.	.000	.000	.000	.000	.817	.277	.531	.365	.605	.817
24. I complete my schoolwork regularly.	.000	.000	.000	.000	.755	.256	.491	.337	.559	.755
26. I am organized about my schoolwork.	.000	.000	.000	.000	.756	.256	.491	.338	.560	.756
27. I use a variety of strategies to learn new material.	.000	.000	.000	.000	.578	.196	.376	.258	.428	.578
30. I spend a lot of time on my schoolwork.	.000	.000	.000	.000	.828	.281	.538	.370	.614	.828
32. I am a responsible student.	.000	.000	.000	.000	.407	.138	.265	.182	.302	.407
33. I put a lot of effort into my schoolwork.	.000	.000	.000	.000	.886	.300	.576	.396	.657	.886
35. I concentrate on my schoolwork.	.000	.000	.000	.000	.888	.301	.577	.397	.658	.888
36. I check my assignments before I turn them in.	.000	.000	.000	.000	.707	.240	.460	.316	.524	.707

Note. ASP = academic self-perceptions; ATT = attitudes toward teachers; ATS = attitudes toward school; MOT/S-R = motivation/self-regulation.

Table 2
Cronbach's Alpha Reliabilities and Interfactor Correlations for the Five Factors of the School Attitude Assessment Survey-Revised (SAAS-R)

Factor	1	2	3	4	5
ASP	(.855)				
ATT	.364	(.892)			
ATS	.267	.603	(.865)		
Goals	.367	.507	.343	(.889)	
MOT/S-R	.339	.65	.447	.741	(.912)

Note. ASP = academic self-perceptions; ATT = attitudes toward teachers; ATS = attitudes toward school; MOT/S-R = motivation/self-regulation. Reliabilities of the five factors are in parentheses.

sistency reliability coefficient of at least .85 on each of the five factors. Table 2 reports the reliabilities and interfactor correlations of the five factors.

Evidence of Criterion-Related Validity

We hypothesized that this instrument could help distinguish academically able achievers from academically able underachievers. Therefore, we conducted a series of *t* tests on the mean scale scores of the five factors to explore the differences in academically able achievers' and underachievers' academic self-perceptions, attitudes toward teachers, attitudes toward school, goal valuation, and motivation/self-regulation (see also McCoach & Siegle, in press). The sample consisted of 176 gifted high school students in Grades 9 through 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 score or achievement score at or above the 92nd percentile. According to these criteria, the final sample contained 56 gifted underachievers and 120 gifted achievers. Although 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 3 students who did not indicate their gender. Although the gender 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; Wolfle, 1991). The sample consisted of 20 freshmen, 50 sophomores, 53 juniors, 50 seniors, and 3 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.

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, we utilized Welch's *t* test, which adjusts the degrees of freedom to compensate for the inequality of the variances. For each of the subscales that exhibited unequal variances, the gifted underachievers displayed greater variances than the gifted achievers. The mean differences between the achievers and underachievers' attitudes toward teachers, attitudes toward school, goal valuation, and motivation/self-regulation were statistically significant ($p < .001$), and the differences between the gifted achievers and the gifted underachievers on these four subscales exhibited moderate to large effect sizes ($d = .67$ to $d = 1.29$), with gifted achievers exhibiting higher means than gifted underachievers on each of these four subscales. The largest mean differences between gifted achievers and gifted underachievers occurred on the Motivation/Self-Regulation subscale and the Goal Valuation subscale; the effect sizes for both of these mean differences were greater than 1.0. The mean difference of the Academic Self-Perceptions subscale was not statistically significant, and this was the only subscale that demonstrated a small effect size ($d = .42$). Table 3 reports the results of this analysis. The *t* tests showed that this instrument could differentiate between gifted achievers and gifted underachievers. For more details about this study, see also McCoach and Siegle (in press).

Our findings suggest that the scores on the SAAS-R appear to demonstrate evidence of adequate construct validity, criterion-related validity, and internal consistency reliability. Therefore, its use as a research instrument seems justifiable. In addition, four of the five factors of the SAAS-R appear to differentiate gifted achievers from gifted underachievers (McCoach & Siegle, in press). It is our hope that the SAAS-R will allow researchers to more fully understand the relationship between these five factors and underachievement in gifted and nongifted populations. In addition, we hope this instrument will provide educators and psychologists a new tool to identify adolescents who may be at risk for underachievement. Isolating factors that contribute to the

Table 3
t Tests and Effect Size Measures on Each of the Five Factors on the School Attitude Assessment Survey–Revised (SAAS-R) Between Gifted High Achievers and Underachievers

Subscale	Achievers (<i>n</i> = 120)		Underachievers (<i>n</i> = 56)		<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
ASP	6.17	0.590	5.84	0.973	.019	0.46
ATT	5.33	0.915	4.58	1.015	< .001	0.78
ATS	5.33	1.19	4.41	1.54	.001	0.67
Goal valuation	6.56	0.592	5.32	1.42	< .001	1.23
MOT/S-R	5.39	0.975	3.88	1.37	< .001	1.29

Note. ASP = academic self-perceptions; ATT = attitudes toward teachers; ATS = attitudes toward school; MOT/S-R = motivation/self-regulation.

academic underachievement of adolescents is the first step toward reversing adolescent underachievement. Any instrument that can help educators to combat these problems merits further exploration and development.

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