

## RESEARCH ARTICLE

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# Do you know what I'm thinking? A comparison of teacher and parent perspectives of underachieving gifted students' attitudes

Del Siegle<sup>1</sup> | Lisa DaVia Rubenstein<sup>2</sup> | D. Betsy McCoach<sup>1</sup>

<sup>1</sup>Department of Educational Psychology,  
University of Connecticut, Storrs,  
Connecticut

<sup>2</sup>Department of Educational Psychology, Ball  
State University, Muncie, Indiana

**Correspondence**

Del Siegle, University of Connecticut, 2131  
Hillside Rd Unit 3007, Storrs, CT 06269-  
3007.

Email: del.siegle@uconn.edu

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**Abstract**

The Achievement Orientation Model posits students are motivated to do well in school when they believe they have the necessary skills to perform a task (self-efficacy), find the task meaningful (goal valuation), and see their environment as supportive. When these factors are present, students self-regulate and achieve. We examined these factors from underachieving gifted students', their parents', and teachers' perspectives. Results indicated teachers recognize students who are confident and not confident about their abilities to be academically successful; however, they are less able to recognize when students value the work they are encountering in school. Parents' perceptions of students' attitudes more closely correlated with students' perceptions than teachers' perceptions correlated with students' perceptions. Teachers and parents appeared to base their perception of the importance students hold for school on their perception of students' self-regulation. Furthermore, gender differences existed in students' perceptions. Females' self-efficacy scores were statistically lower than males' self-efficacy scores, and males' self-regulation scores were lower than females' self-regulation scores. We provide suggestions for how school psychologists may use these findings to (a) collect important information from students, teachers, and parents, (b) interpret these data to identify underlying influential

factors, and (c) guide the development of appropriate interventions to address student underachievement.

**KEYWORDS**

gifted and talented, motivation, underachievement

## 1 | INTRODUCTION

The underachievement of gifted students is a perplexing problem. At the heart of the underachievement issue is gifted students' failure to realize their potential. This loss of talent not only deprives society of potential contributions, but it also limits students' future opportunities and hampers their ability to achieve self-actualization and experience intellectual fulfillment (Rubenstein, Siegle, Reis, McCoach, & Burton, 2012). As Reis (1998) noted over two decades ago, "Student performance that falls noticeably short of potential, especially for young people with high ability, is bewildering and perhaps the most frustrating of all challenges both teachers and parents face" (p. 12). The unique position school psychologists hold provides opportunities to support students, teachers, and parents in enhancing student achievement.

Underachievement affects students from low, medium, and high socioeconomic groups and from rural, suburban, and urban areas (Matthews & McBee, 2007; Zabloski & Milacci, 2012). Further, underachievement transcends racial and ethnic barriers (Cavilla, 2017; Diaz, 1998; Reis, Colbert, & Hébert, 2005). Scholars estimate that up to 50% of gifted students underachieve at some point in their school career (Siegle, 2018). Although underachievement affects students across backgrounds and environments, students' gender may differentially influence the manifestation of underachievement. For over a half-century, educators and parents have identified twice as many males as females as underachievers (Baker, Bridger, & Evans, 1998; Gowan, 1955; Matthews & McBee, 2007; McCall, 1994; McCoach, 2002; McCoach & Siegle, 2001; Mofield & Peters, 2019; Peterson & Colangelo, 1996; Richert, 1991; Ritchotte, Matthews, & Flowers, 2014; Siegle, Reis, & McCoach, 2006). Therefore, school psychologists should also be sensitive to issues related to the academic underachievement issues of males.

Underachievement begins as early as elementary school and influences middle and high school, college, and career success, often becoming a persistent and/or growing problem (Barbier, Donche, & Verschuere, 2019; McCall, Evahn, & Kratzer, 1992; Peterson & Colangelo, 1996; Snyder, Carrig, & Linnenbrink-Garcia, 2019). Gifted students who begin underachieving in middle school struggle to reverse the pattern throughout high school and into college; Peterson (2000) found that only half of the gifted students who underachieve in high school complete 4 years of college. Because underachievement in middle school and high school affects students' chances for future career success, underachievement is an important phenomenon to study, understand, and address.

Students' attitudes and beliefs can influence what tasks students seek, and whether they are able to obtain them (Siegle, McCoach, & Roberts, 2017). An essential understanding of students' attitudes and how others' perceive them, in relation to their achievement, is necessary when developing appropriate interventions to address underachievement. School psychologists can play an important role in identifying struggling students, determining underlying influential factors, and developing interventions.

Scholars have studied perceptions held by individuals in a variety of grouping combinations. Metaperception researchers have explored how individuals view other people's views of them (e.g., Carlson & Barranti, 2016; Wilson, 2006). Education researchers have examined the relationships between teachers' perceptions of student abilities and student achievement (e.g., Timmermans, de Boer, & van der Werf, 2016). Others have examined differences in how teachers' and students' perceive the same learning environment (e.g., Stewart, 2016). However, limited research exists comparing students' attitudes about themselves with teachers' and parents' perceptions of those students' attitudes. This study addresses that question. By understanding the perspectives of underachieving

students, their teachers, and their parents, school psychologists can better assist students in their struggle to reverse underachievement.

## 2 | BACKGROUND OF THE STUDY

### 2.1 | Definition of underachievement

Underachievement is consistently defined as the discrepancy between expected achievement and actual achievement (Reis & McCoach, 2000); however, operationalizing this definition is an ongoing discussion within the gifted field. First, there is no universally accepted conception of giftedness. For example, some definitions include creativity (Renzulli, 2005), whereas, others do not (Robinson, 2005). Some specify the top 10% (Gagné, 2005), and others suggest the top 15–20% (Renzulli, 2005), and others still use the top 1–3% (Robinson, 2005).

In a 2010 position paper, The National Association for Gifted Children (2010) provides some guidance for practitioners as they struggle with the concept:

*Gifted individuals are those who demonstrate outstanding levels of aptitude (defined as an exceptional ability to reason and learn) or competence (documented performance or achievement in top 10% or rarer) in one or more domains. Domains include any structured area of activity with its own symbol system (e.g., mathematics, music, language) and/or set of sensorimotor skills (e.g., painting, dance, sport).*

*The development of ability or talent is a lifelong process. It can be evident in young children as exceptional performance on tests and/or other measures of ability or as a rapid rate of learning, compared to other students of the same age, or in actual achievement in a domain. As individuals mature through childhood to adolescence; however, achievement and high levels of motivation in the domain become the primary characteristics of their giftedness. Various factors can either enhance or inhibit the development and expression of abilities. (para. 1–2).*

Measuring the components of underachievement, including both expected and actual achievement levels, presents an additional challenge. Expected performance (potential), often is measured by standardized assessments, and actual performance (achievement) is measured by school grades or achievement scores (Post, 2016; Reis & McCoach, 2000; Ritchotte et al., 2014; White, Graham, & Blaas, 2018). The variety of measurement combinations and the multiple methods for comparing expected and actual performance yields inconsistent and incomparable studies. Reis and McCoach (2000) offered a definition of underachievement that has permeated the field:

*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 and must persist over an extended period of time. 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). (p. 157)*

As a point of caution, although this study examines students who are specifically underachieving in either mathematics or reading/language arts, it is unreasonable to expect gifted students to achieve at the highest levels

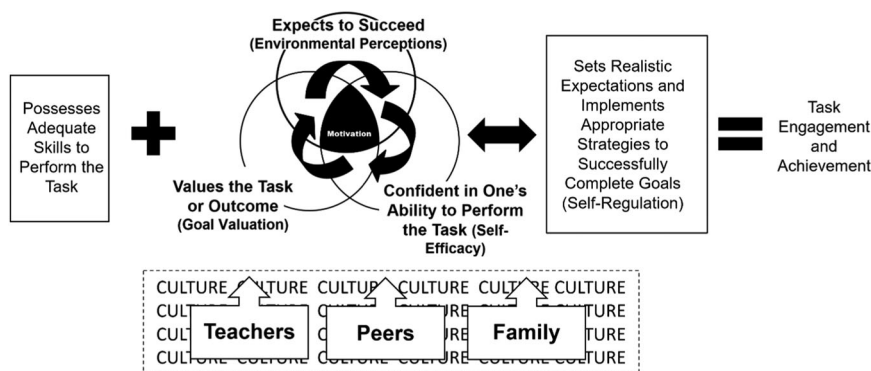
in every area. First, gifted students may choose not to exert effort in areas that are not important to them, while expending effort to excel in areas that they enjoy and value (Spiers Neumeister & Hébert, 2003). In addition, each student possesses a unique spectrum of traits and talents. Even highly gifted students may perform near average levels in an area of relative weakness. Thus, the students who should be of greatest concern to psychologists, parents, and educators are those that are failing to achieve in *any* productive area over at least 1 year that is not due to a physical, mental, or learning disability (Post, 2016).

### 3 | THEORETICAL FRAMEWORK

Over the last 30 years, numerous researchers have developed different categories of underachievers and the behaviors these underachievers exhibit (Heacox, 1991; Mandel & Marcus, 1995; Rimm, 1995; Snyder & Linnenbrink-Garcia, 2013; White et al., 2018). These different categories are driven by different underlying factors influencing achievement (Rubenstein et al., 2012). Recently, a large meta-analysis examined these factors associated with underachievement (White et al., 2018). The authors analyzed 114 quantitative studies and reviewed nine qualitative studies. Out of the 114 quantitative studies in the last 15 years, nine studies directly compared achievers and underachievers on affective factors such as motivation, emotion, and students' perceptions of school. In general, gifted underachievers exhibited lower scores on each of these factors than their achieving counterparts.

One of the primary studies included in this meta-analysis was McCoach and Siegle's (2003a) examination of the differences between achieving and underachieving gifted students on measures of general academic self-perceptions, goal valuation, attitudes toward school, attitudes toward teachers, and motivation/self-regulation. Underachieving gifted students exhibited higher variability than their achieving counterparts, illustrating the heterogeneous nature of gifted underachievers. From this research, McCoach and Siegle (2003a) proposed the Achievement Orientation Model (AOM; Siegle, 2013; Siegle & McCoach, 2005; Siegle et al., 2017). In the AOM (see Figure 1), students' perceptions in three areas (self-efficacy, goal valuation, and environmental perceptions) interact to motivate students to self-regulate their actions, leading to subsequent engagement and achievement. Further, peers, parents, and teachers influence students' attitudes in these three areas of self-efficacy, goal valuation, and environmental perceptions.

Both qualitative and quantitative researchers (Barbier et al., 2019; Brigandi, Siegle, Weiner, Gubbins, & Little, 2016; Brigandi, Siegle, Weiner, Gubbins, & Little, 2018; McCoach & Siegle, 2001; McCoach & Siegle, 2003a; McCoach, 2002; Mofield & Peters, 2019; Rubenstein et al., 2012; Siegle, McCoach, & Shea, 2014a;



**FIGURE 1** Achievement Orientation Model. The model suggests students' attitudes in the areas of self-efficacy, goal valuation, and environmental perceptions interact and influence their self-regulation behavior. Reprinted with permission of Del Siegle

Siegle, Rubenstein, & Mitchell, 2014b) have examined the elements in the AOM, using the School Attitude Assessment Survey-Revised (SAAS-R; McCoach & Siegle, 2003b). In general, the model components predict educational aspirations (Kirk et al., 2012) and are able to differentiate high and low achievers at different ages and in a variety of countries (Davies, 2012; Figg, Rogers, McCormick, & Low, 2012; Long & Erwin, 2016; Perez, Costa, Corbi, & Iniesta, 2016; Ritchotte et al., 2014; Suldo, Shaffer, & Shaunessy, 2008). The components of the AOM have considerable empirical support and have anchored many recent gifted underachievement studies (Abu-Hamour & Al-Hmouz, 2013; Figg et al., 2012; Ritchotte et al., 2014; Rubenstein et al., 2012).

## 4 | ACHIEVEMENT ORIENTATION MODEL

As noted, according to the AOM, three affective characteristics influence academic behaviors and subsequent achievement. Individuals who achieve believe they have the skills to do well (self-efficacy), value the task they are attempting (goal valuation), and believe their efforts will be supported (environmental perception). When these three factors are present, individuals generally set realistic goals and self-regulate their behavior to succeed. According to the model, when any one of the attitudes is low, achievement suffers. In subsequent sections, we discuss each model component that we measured in this research.

### 4.1 | Self-efficacy

Self-efficacy is defined as the belief that one can accomplish a given task. For gifted students, it addresses the question, "Am I smart enough?" Extensive research supports the positive relationship between believing one has the capacity to perform an academic task and actual academic achievement (Artino, 2012; Multon, Brown, & Lent, 1991; Robbins et al., 2004). Students with low self-efficacy toward a task will avoid it, while those with high self-efficacy are more likely to attempt it. Students work harder at tasks for which they are efficacious and persist longer in the face of difficulties (Bandura, 1986; Bandura, 1989; Schunk & Pajares, 2013).

Early research documented that underachieving gifted students have lower self-perceptions or lower self-efficacy than achieving students (Diaz, 1998; Ford, 1996); however, some research suggests that the academic self-perceptions of both gifted underachievers and achievers are high (Lupart & Pyryt, 1996; McCoach & Siegle, 2003a). Underachieving gifted students may realize that they are intelligent and capable but make a conscious decision not to complete required tasks for various reasons (Snyder & Linnenbrink-Garcia, 2013; Spiers Neumeister & Hébert, 2003). Despite these equivocal findings, self-efficacy remains an important factor influencing academic achievement (Schunk & Pajares, 2013). High self-efficacy seems necessary, but not sufficient for achievement.

### 4.2 | Goal valuation/meaningfulness

In addition to believing they have the skills to perform well, students must also value a task. Goal valuation is the belief individuals hold about the overall importance of school and academic attainment. It addresses the question, "Why would I want to achieve? Why do I care?" Goal valuation is a strong predictor of underachievement (Siegle & McCoach, 2003a). Goal valuation is similar to Wigfield and Eccles' (1992) widely-researched expectancy-value theory. Wigfield and Eccles' value construct is composed of four components: attainment value, intrinsic interest/value, utility value, and cost. Attainment value is the importance of doing well on a task as a reflection of one's identity. Intrinsic interest/value is the pleasure someone derives from a task. Utility value is the usefulness of the task for achieving an end, and cost assesses what one must give up to achieve the current task. Each component offers possible reasons students might value (or eschew) tasks.

The curricular and instructional strategies gifted students encounter in school may not meet their needs for intellectual stimulation (Fisher & Oyserman, 2017; Snyder & Linnenbrink-Garcia, 2013). This can lead to declines in academic interest, engagement, motivation, and performance (Wang & Eccles, 2013). Little (2012) suggested an effective curriculum for gifted students should be at an accelerated pace, appropriately challenging, and include greater complexity. Differentiating curriculum, instruction, and assessment with appropriate scaffolding builds academic value (VanTassel-Baska & Wood, 2009). Student interest may also promote goal valuation (Renzulli & Reis, 2014; Siegle, Rubenstein, Pollard, & Romey, 2010). Therefore, valuing the goals of the school and finding them meaningful are essential precursors to achievement.

### 4.3 | Environmental perception

"Not only can students' perceptions of self and their value of tasks lead to differences in academic achievement, students' perceptions of the supportive nature of their environment can also lead to differences in achievement" (Siegle et al., 2017, p. 65). Environmental perceptions are students' beliefs regarding how conducive the environment is for their success. It addresses the question, "Can I be successful here?" The interactions between individuals and their environment are important for achievement (Ziegler & Phillipson, 2012). When students do not believe their teachers or peers care about them it adversely affects their motivation (Winton, 2013). Conversely, students' positive perceptions of the school environment lead to higher confidence (Brigandi, 2015).

The current study used a general approach to environmental perceptions by asking study participants about fairness and chances for success within the school environment. School environments exert considerable influence over students' achievement, and teachers are particularly important. Gifted students are more likely to trust the environment and believe they can learn when teachers demonstrate mastery of the content they teach and engage in high-quality pedagogical practices (Siegle et al., 2014b). Knowledgeable teachers differentiate content to meet the more advanced needs of gifted students, vary their instructional style, hold in-depth discussions, and provide interdisciplinary and real-world connections. Collectively, self-efficacy, goal valuation, and environment perception attitudes influence self-regulation behaviors.

### 4.4 | Self-regulation

Self-regulation is the ability to recognize one's goals and the strategies needed to achieve them. It answers the question, "How do I get the job done?" Self-regulation includes setting standards for the desirable behavior, being motivated to meet those standards, and monitoring the situations and thoughts that precede meeting those standards (Baumeister, Schmeichel, & Vohs, 2007). Self-regulation strongly relates to students' academic performance in school (Zimmerman, 2011; Zimmerman & Kitsantas, 2014). Gifted underachievers may demonstrate poor self-regulation strategies including poor goal setting and coping strategies (Baum, Renzulli, & Hébert, 1995; Morisano, Hirsh, Peterson, Pihl, & Shore, 2010; Snyder et al., 2019). Even though McCoach and Siegle (2003a; 2003c) showed the importance of self-regulation in achievement, underachieving gifted students are often able to self-regulate in topics and areas that interest them (Baum et al., 1995).

## 5 | PURPOSE

The AOM suggests positive self-efficacy, goal valuation, and environmental perceptions are prerequisites for motivation and self-regulation.

*Although self-regulation may serve as the engine, propelling students toward achievement, the path to self-regulation and eventual achievement begins with positive views' about one's ability to succeed, the friendliness of the environment, and the importance of the task at hand. (Siegle et al., 2017, p. 66)*

All four factors; however, serve as influential components in the promotion of academic achievement.

In this study, we examined how underachieving gifted students rated themselves on the elements of the AOM compared to how their parents and teachers rated these same students on these elements. The extent to which stakeholders' perceptions correlate across specific constructs provides important information for school psychologists. If these perceptions are highly correlated, parents, teachers, and students all agree in their evaluations of these factors. In such a scenario, it is easier to determine on which element to first intervene. For example, if students, parents, and teachers all perceive self-efficacy as the biggest need, the school psychologist could recommend an intervention targeting self-efficacy. However, the correlations between parents, teachers, and students are low, parents, teachers, and students may disagree about the nature of the students' underachievement. If great disparities exist among raters, it is important to mediate these perception gaps during the consultation. Further, we were interested in gender differences in student ratings as this may also support school psychologists' decisions in intervention selection. This is particularly important if males and females differ in components of AOM. By understanding these differences, school psychologists can more effectively help underachieving students address the issues most likely affecting their achievement. Specifically, the following research questions guided our work:

1. To what extent are teachers', parents', and students' personal perceptions of the gifted students' underachievement related?
2. Do female and male underachieving gifted students perceive themselves differently?

## 6 | METHODS

### 6.1 | Participants

Following approval for the study by our university institutional review board, we recruited teachers to participate in this study through multiple methods: mailings using a national research center database, advertisements at national and state gifted conferences, and solicitations during professional development opportunities led by the research team. Participating teachers joined the study by seeking and obtaining their school administrator's permission. Following administration permission, teachers identified underachieving gifted students in their school using the following criteria we provided to them:

#### 6.1.1 | Students had to meet one of the following characteristics of giftedness

- Individual IQ test score of at least 120, given no earlier than 6 years of age or
- Composite standardized achievement test scores (administered within the past 3 years) in the 90th percentile locally.

#### 6.1.2 | Students had to meet the criteria for lower than expected achievement

- Have grades in the bottom half of his or her class and/or math/language arts or
- Have a C average or below and they must be labeled a bright underachiever by a classroom teacher, gifted specialist, or counselor.

**TABLE 1** Student demographics

	Percent (n)
Gender	
Male	71.7 (170)
Female	24.1 (57)
Not indicated	4.2 (10)
Recommended subject of underachievement	
Math	33.8 (80)
Language arts/reading	61.6 (146)
Not indicated	4.6 (11)
Ethnicity	
African American	3.3 (8)
Hispanic/Latino(a)	11.0 (26)
Native American	2.5 (6)
White	68.4 (162)
Not indicated	14.8 (35)
Grade level	
4	1.3 (3)
5	12.0 (38)
6	19.0 (45)
7	23.2 (55)
8	22.8 (54)
9	5.1 (12)
10	3.0 (7)
11	3.0 (7)
Not indicated	6.8 (16)

Teachers documented which of these criteria they used to identify students as gifted and underachieving. The teachers sent the parents/guardians of the students whom they identified as being gifted and underachieving based on having a high IQ or high achievement test score and low grades in either mathematics or reading/language arts a letter inviting the student and parent/guardian to participate in the study. The letter was available in both English and Spanish. A total of 272 parents/guardians returned signed permission forms. Both the student and the parent/guardian signed the permission form.

After receiving the signed permission forms, we provided the teachers with separate teacher, student, and parent versions of the SAAS-R. The teachers and students completed the SAAS-R at school. Parents received the SAAS-R in a sealed envelope carried home by the student. We collected the data in the fall of the school year. Teachers, students, and parents completed the survey independently and were not aware of each other's ratings. A total of 237 students, 221 teachers, and 142 parents/guardians completed surveys.

As indicated in Table 1, the majority of students were underachieving in reading/language arts (61.6%). Teachers nominated males (71.7% of the sample) at three times the rate of females, and the majority of the student (68.4%) were White. Over half of the students were in Grades 6–9. We obtained IQ scores for 150 students, and the mean was 131.

Students attended 95 schools across 30 states. As previously indicated, not all of the 237 students' teachers and parents participated in this study by completing the SAAS-R. The majority ( $n = 172$ ) of participating teachers evaluated a single student. Considerably fewer parents participated: 142 parents or guardians completed the instrument. Mothers (90%) completed the survey more than fathers. Generally, parents held high educational expectations for the underachieving students. Only 11% of the parents did not expect their underachieving child to complete 4 years of college, 59% expected their underachieving child to complete 4 years of college, and 30% expected the underachieving child to earn a graduate degree.



**TABLE 2** Subscale information for entire sample

Subscale	Sample items	Mean	Standard deviation	Cronbach's alpha
Parent: Environmental Attitudes ( <i>n</i> = 142)	<ul style="list-style-type: none"> <li>• My child looks forward to math class.</li> <li>• My child complains about math class.</li> </ul>	4.6108	0.99198	.893
Parent: Self-Regulation ( <i>n</i> = 142)	<ul style="list-style-type: none"> <li>• My child completes his/her schoolwork regularly.</li> <li>• My child is organized about his/her math schoolwork.</li> </ul>	3.4287	1.33311	.968
Parent: Goal Valuation ( <i>n</i> = 142)	<ul style="list-style-type: none"> <li>• My child seems to value academics.</li> <li>• My child realizes the importance of doing well in school.</li> </ul>	4.6458	1.49864	.917
Student: Environmental Perception ( <i>n</i> = 237)	<ul style="list-style-type: none"> <li>• I am treated fairly in school.</li> <li>• I have no control over my academic success or failure.</li> </ul>	5.3936	1.07206	.933
Student: Self-Regulation ( <i>n</i> = 237)	<ul style="list-style-type: none"> <li>• I am organized about my schoolwork.</li> <li>• I complete my schoolwork regularly.</li> </ul>	4.1609	1.28735	.864
Student: Goal Valuation ( <i>n</i> = 237)	<ul style="list-style-type: none"> <li>• It is important for me to do well in school.</li> <li>• Doing well in schools is one of my goals.</li> </ul>	5.8477	1.16671	.915
Student: Self-Efficacy ( <i>n</i> = 237)	<ul style="list-style-type: none"> <li>• I am good at learning new things in school.</li> <li>• I can learn new ideas quickly in school.</li> </ul>	4.9646	0.98484	.952
Teacher: Environmental Perception ( <i>n</i> = 220)	<ul style="list-style-type: none"> <li>• This student thinks he/she has no control over his/her academic success or failure.</li> <li>• This student believes teachers respect him/her.</li> </ul>	4.6124	1.06868	.836
Teacher: Self-Regulation ( <i>n</i> = 221)	<ul style="list-style-type: none"> <li>• This student is organized about his/her schoolwork.</li> <li>• This student completes his/her schoolwork regularly.</li> </ul>	2.7559	1.20802	.941
Teacher: Goal Valuation ( <i>n</i> = 221)	<ul style="list-style-type: none"> <li>• The student believes it is important to get good grades in school.</li> <li>• Doing well in school is one of the student's primary goals.</li> </ul>	4.2300	1.37440	.933
Teacher: Self-Efficacy ( <i>n</i> = 221)	<ul style="list-style-type: none"> <li>• This student believes he/she is intelligent.</li> <li>• This student believes he/she is capable of getting straight A's.</li> </ul>	4.8113	1.28879	.889

## 7 | INSTRUMENTATION

Students, parents, and teachers completed instruments based on the SAAS-R (McCoach & Siegle, 2003b), which was adjusted for each of the audiences. For example, on the self-regulation factor, the original student instrument contained this item: "I complete my schoolwork regularly." For the parent instrument, we reworded the item to, "My child completes his/her schoolwork regularly." For the teacher instrument, this item read, "This student completes his/her schoolwork regularly." In this sample, the Cronbach's alpha reliabilities for scores on all the subscales we used were above .80 (see Table 2).

The students rated their own attitudes, while the teachers' and parents' ratings rated their perceptions of the students' attitude or actions. For both the teacher and student versions, the items followed the four-factor model of the AOM: self-efficacy, goal valuation, environmental perception, and self-regulation/motivation. For parents, only three of the four factors demonstrated adequate reliability. The self-efficacy factor was not sufficiently reliable on the parent scale and is not reported in this study. Participants rated all of the items on a 7-point scale from 1 = *strongly disagree* to 7 = *strongly agree*. We reverse coded negatively worded items before creating the composite scores for each construct.

## 8 | DATA ANALYSIS

Given each rater (parent, teacher, and student) completed rating scales for the four components of the AOM: goal valuation, self-regulation, environmental perceptions, and self-efficacy (although we do not include the parent self-efficacy subscale in this study due to low reliability), our data follow the form of a classic multitrait multimethod matrix (Shadish, Cook, & Campbell, 2002). MTMM are notoriously difficult to fit, especially within the classic correlated traits, correlated methods confirmatory factor analysis (CFA) framework (Dumenci & Yates, 2012; Marsh & Grayson, 1995). Our correlation matrix produced nonconvergent and/or inadmissible solutions for traditional MTMM CFA analysis including the correlated traits, correlated methods (ST-SM) and correlated traits, uncorrelated methods (CT-UM). In addition, our correlation matrix produced inadmissible solutions for CFA models of the traits (ignoring methods), CFA models of the methods (ignoring traits), and the correlated traits-correlated uniquenesses (CT-CU) model. In a traditional MTMM, we expect correlations between measures of the same construct across different raters (monotrait heteromethod correlations) to be higher than correlations among different constructs by the same rater (heterotrait monomethod correlations), and those should in turn be higher than correlations of different traits by different raters (heterotrait/heteromethod correlations). However, our data did not fit this pattern, which foiled our attempts to use MTMM analyses within a CFA framework. Therefore, we present descriptive analyses of the patterns of correlations and highlight inconsistencies in the patterns of correlations among stakeholders.

## 9 | RESULTS

Within the results, we labeled all subscales using the following convention: Factor-Rater. For example, Goal Value-T represents how teachers rated the underachieving gifted students' goal valuation, Goal Value-P represents how parents rated the underachieving gifted students' goal valuation, and Goal Value-S represents how students rated their own goal valuation

**TABLE 3** Subscale correlations for entire sample

Subscale	EP-P	SR-P	GV-P	EP-S	SR-S	GV-S	SE-S	EP-T	SR-T	GV-T	SE-T
1. EP-P	–	0.602 <sup>a</sup>	0.562 <sup>a</sup>	<b>0.441<sup>a</sup></b>	0.458 <sup>a</sup>	0.329 <sup>a</sup>	0.351 <sup>a</sup>	<b>0.325<sup>a</sup></b>	0.269 <sup>a</sup>	0.448 <sup>a</sup>	0.398 <sup>a</sup>
2. SR-P		–	0.720 <sup>a</sup>	0.240 <sup>a</sup>	<b>0.587<sup>a</sup></b>	0.329 <sup>a</sup>	0.169 <sup>b</sup>	0.214 <sup>a</sup>	<b>0.357<sup>a</sup></b>	0.348 <sup>a</sup>	0.221 <sup>a</sup>
3. GV-P			–	0.272 <sup>a</sup>	0.487 <sup>a</sup>	<b>0.467<sup>a</sup></b>	0.222 <sup>a</sup>	0.224 <sup>a</sup>	0.273 <sup>a</sup>	<b>0.355<sup>a</sup></b>	0.224 <sup>a</sup>
4. EP-S				–	0.485 <sup>a</sup>	0.607 <sup>a</sup>	0.459 <sup>a</sup>	<b>0.321<sup>a</sup></b>	0.293 <sup>a</sup>	0.257 <sup>a</sup>	0.235 <sup>a</sup>
5. SR-S					–	0.561 <sup>a</sup>	0.293 <sup>a</sup>	0.145 <sup>b</sup>	<b>0.401<sup>a</sup></b>	0.318 <sup>a</sup>	0.082
6. GV-S						–	0.388 <sup>a</sup>	0.148 <sup>b</sup>	0.200 <sup>a</sup>	<b>0.210<sup>a</sup></b>	0.108
7. SE-S							–	0.094	0.144 <sup>b</sup>	0.147 <sup>b</sup>	<b>0.464<sup>a</sup></b>
8. EP-T								–	0.500 <sup>a</sup>	0.531 <sup>a</sup>	0.368 <sup>a</sup>
9. SR-T									–	0.713 <sup>a</sup>	0.206 <sup>a</sup>
10. GV-T										–	0.301 <sup>a</sup>
11. SE-T											–

Note: We include frames to distinguish the correlations between teachers and students, parents and students, and parents and teachers. Monotrait correlation coefficients are in bold.

Abbreviations: EP-P, Parents' Perception of Students' Environmental Perception; EP-S, Students' Environmental Perception; EP-T, Teachers' Perception of Students' Environmental Perception; GV-P, Parents' Perception of Students' Goal Valuation; GV-S, Students' Goal Valuation; GV-T, Teachers' Perception of Students' Goal Valuation; SE-S, Students' Self-Efficacy; SE-T, Teachers' Perception of Students' Self-Efficacy; SR-P, Parents' Perception of Students' Self-Regulation; SR-S, Students' Self-Regulation; SR-T, Teachers' Perception of Students' Self-Regulation.

<sup>a</sup>Correlation is significant at the 0.01 level (two-tailed).

<sup>b</sup>Correlation is significant at the 0.05 level (two-tailed).

## 9.1 | Question 1: To what extent are teachers', parents', and students' personal perceptions of the gifted students' underachievement related?

To address this question, we examined the extent to which different stakeholders' perceptions of the same subscales correlated with each other, hypothesizing that the same (i.e., matched) subscales rated by different groups would be more highly correlated than different (i.e., mismatched) subscales rated by different groups. For example, Goal Value-T would correlate more strongly with Goal Value-S and Goal Value-P than it would with Environmental Perception-S or Environmental Perception-P. The degree of alignment indicates the degree to which stakeholders perceive the factors related to underachievement similarly. All correlations discussed in this section appear in Table 3. Most matched correlations were statistically significant, indicating a degree of agreement that is often not found among different stakeholders considering the same phenomenon. For example, Gentry, Rizza, and Owen (2002) did not find an agreement between the teacher and student ratings of classroom experiences.

## 9.2 | Between students and teachers

When comparing students' and teachers' perceptions, the monotrait heteromethod (same trait, different raters) correlations (Environmental Perception [ $r = .321$ ], Self-Regulation [ $r = .401$ ], and Self-Efficacy [ $r = .464$ ]) were higher than all of the heterotrait heteromethod (different traits, different raters) correlations. Of note, the self-efficacy student-teacher relationship was the highest among any of the student-teacher matched subscales. Teachers tended to recognize which of their underachieving students were confident in their abilities and which were not.

The only correlation that did not match our hypothesis was Goal Valuation-T and Goal Valuation-S subscales ( $r = .210$ ). This correlation was lower ( $r = .210$ ) than many of the heterotrait heteromethod correlations. Goal Valuation-T was at least as correlated with Self-Regulation-S ( $r = .318$ ) and with Environmental Perception-S ( $r = .259$ ) as it was with its matched subscale, Goal Valuation-S, and Goal Valuation-S was almost as correlated with Self-Regulation-T ( $r = .20$ ) as it was with its matched subscale, Goal Valuation-T ( $r = .21$ ). Thus, teachers' perceptions

of how much-gifted underachievers value the work they are doing in school were only weakly correlated with students' self-perceptions of their goal valuation.

The weakest of all heterotrait heteromethod relationships was between teachers' ratings of the students' self-efficacy and students' ratings of their own self-regulation ( $r = .082$ ). Therefore, there was essentially no relationship between how students' self-reported self-regulation and teachers' perceptions of students' confidence in their own abilities.

### 9.3 | Between students and parents

Unfortunately, we were not able to measure parents' perceptions of students' self-efficacy given the low reliability of the scores on this scale. The three monotrait heteromethod correlations (for environmental perceptions, goal valuation, and self-regulation) were more correlated between parents and students than they were between teachers and students.

The Self-Regulation-P subscale was most closely correlated with Self-Regulation-S ( $r = .587$ ). However, Environmental Perception-P was at least as correlated with Self-Regulation-S ( $r = .458$ ) as it was with the hypothesized Environmental Perception-S ( $r = .441$ ). Further, the Goal Valuation-P was at least as correlated with Self-Regulation-S ( $r = .487$ ) as it was with the hypothesized Goal Valuation-S ( $r = .467$ ). In these cases, these heteromethod heterotrait correlations were at least as large as the monotrait heteromethod correlations were. Parent ratings of how they felt their children valued schoolwork and how they believed their children viewed support in the school environment each related to their students' self-regulation, which also provides support for the AOM.

### 9.4 | Between teachers and parents

In general, the homotrait heteromethod correlations for parents and teachers' ratings were more highly correlated than the heterotrait heteromethod correlations were for both self-regulation and goal valuation. The exception was Environmental Perception-P, which more closely correlated with Goal Valuation-T ( $r = .448$ ) and Self-efficacy-T ( $r = .398$ ) than it was with Environmental Perception-T ( $r = .325$ ). Self-Regulation-T and Self-Regulation-P ( $r = .357$ ) and Goal Valuation-T and Goal Valuation-P ( $r = .355$ ) had similar correlations.

### 9.5 | Within groups

Although our main interest was to explore the correlations among the different groups' perceptions on similar constructs, the strongest correlations were within the same groups. Self-Regulation-P and Goal Valuation-P was the strongest relationship in the entire study ( $r = .720$ ), and the second-highest correlation was between Self-Regulation-T and Goal Valuation-T ( $r = .713$ ). This suggests that parents and teachers may evaluate how much students value school based on their perceptions of students' self-regulatory behavior, such as being organized and consistently completing homework.

The AOM posits that self-regulation is partially a byproduct of student self-efficacy, goal valuation, and environmental perceptions. With the student self-report data, we found that goal valuation ( $r = .561$ ) and environmental perceptions ( $r = .485$ ) were much more strongly related to self-regulation than students' self-efficacy ( $r = .293$ ). As previously noted, some research suggests that perhaps gifted students' self-efficacy is also not a good predictor of their academic achievement (McCoach & Siegle, 2003a). Perhaps some level self-efficacy is necessary, but not sufficient for academic achievement.

## 9.6 | Question 2: Do female and male underachieving gifted students perceive themselves differently?

To answer this question, we conducted an omnibus MANOVA to determine if there were gender differences in any of the students' subscales. The overall  $F$ -value was statistically significant ( $F[4, 225] = 5.284$ ;  $p < .001$ ), so we examined the individual differences with discriminant analysis. Both self-efficacy (Wilks' Lambda = 0.954;  $F[1, 223] = 10.655$ ;  $p < .001$ ) and self-regulation (Wilks' Lambda = 0.918;  $F[1, 223] = 9.926$ ;  $p < .001$ ) were statistically significant predictors of gender. The males' self-efficacy ( $M = 5.08$ ; standard deviation [ $SD$ ] = 0.91) was higher (Cohen's  $d = 0.46$ ) than the females' ( $M = 4.59$ ;  $SD = 1.22$ ), and the females' self-regulation ( $M = 4.45$ ;  $SD = 1.27$ ) was higher (Cohen's  $d = 0.30$ ) than males ( $M = 4.08$ ;  $SD = 1.26$ ). These represent effect sizes between small and medium. Although this finding confirms those of multiple studies that females are more likely to have lower self-efficacy than males (e.g., Casey, Nuttall & Pezaris, 1997; Siegle & Reis, 1998; Van Rooy, Stough, Pipingas, Hocking, & Silberstein, 2001), it also adds to the field by specifically confirming similar results with *underachieving gifted* females. Assuming lower self-regulation is associated with underachievement, the lower self-regulation males report would explain research showing teachers and parents identify two to three times as many males as underachieving as females (e.g., Mofield & Peters, 2019; Ritchotte et al., 2014).

## 10 | DISCUSSION

Many researchers have employed the AOM to understand the underachievement of gifted students (Figg et al., 2012; Ritchotte et al., 2014; Rubenstein et al., 2012), yet none have examined how different stakeholders perceive the same student across these theorized factors. Using the AOM, we compared students', teachers' and parents' perceptions of students' attitudes on the four key components: self-efficacy, goal valuation, environmental perceptions, and self-regulation. Teachers' perceptions were closely aligned with students' self-efficacy and self-regulation, but teachers were less successful at gauging the extent to which students value school. In general, parents' perceptions were more closely aligned with students' perceptions than teachers across all factors.

Of course, parents' perceptions of students' academic attitudes and behaviors are likely to be at least partially filtered through the lens of the underachiever. Given that parents receive feedback from both teachers and students about the students' academic performance, parents may serve as arbiters of students' attitudes and behaviors. School psychologists and teachers should consult parents as they work to understand the motivational patterns of underachieving gifted students. Parents' can provide additional insight into factors affecting student motivation. In particular, parents better reflect the value students hold of school. Goal valuation is a strong predictor of self-regulation and student achievement. School psychologists can use parents' perspectives as they work with students and teachers to understand student motivation and help students appreciate the value of academic achievement. In addition to sharing the extent to which they see their children valuing school, parents can also share their children's interests and aspirations.

Further, school psychologists should consult with students directly to understand students' goal valuation, as teachers' perceptions of students' goal valuation were not strongly related to students' own perceptions of their goal valuation. Interestingly, parents' and teachers' goal valuation subscale scores tended to be lower and more variable than students' self-evaluations of their goal valuation. This leads to an interesting question: Are parents and teachers less accurate at determining students' goal valuation or do students tend to overestimate their own goal valuation? Future research should explore the accuracy of perceptions of goal valuation for parents, teachers, and students.

Students' goal valuation was more correlated with their self-regulation than their self-efficacy. As self-regulation is extremely important to achievement (McCoach & Siegle, 2003a), interventions may be more

effective if they target goal valuation. To do that, teachers need to understand students' goal valuation, yet parents and teachers are poor judges of whether students see school as meaningful. Teachers' and parents' perceptions of students' self-regulation were more related to students' self-reports of goal valuation than were their perceptions of students' self-efficacy.

Helping underachievers find meaning in their schoolwork can contribute to reversing their underachievement (Siegle et al., 2006). Teachers should discuss with their gifted students how meaningful they find school assignments. Because many gifted students know much of the content they are being presented (Reis et al., 1993), such discussions, coupled with academic preassessments, may guide the design of academically appropriate instruction for gifted students. Further, gifted students may be more interested in challenging content, and student interest plays a key role in student achievement (Siegle et al., 2010). Students engage and are more successful in activities they find meaningful. School psychologists can assist teachers in incorporating student interests and values into classroom work and activities. As school psychologists discuss students' aspirations and future plans with students, they can help underachieving students appreciate the important role academic achievement plays in students' achieving their goals.

Regarding the second research question, the gender differences we found on self-efficacy and self-regulation with the gifted underachievers in our study reflect similar patterns reported for the general population. Underachieving gifted females continued to show lower confidence in their academic ability than males. Conversely, underachieving gifted males reported lower levels of self-regulation than females. This research indicates that efforts to build young females' confidence need to continue. The greatest impact on self-efficacy is past performances. School psychologists can help young females recognize and appreciate their talents and the skills they have developed.

Additionally, school psychologists can work with young males on self-regulation skills. The male's lower self-regulation provides support to the myriad of studies reporting teachers and parents identify more males as underachievers than females. In our study, similar to other studies cited in this paper, teachers nominated three times as many males. The overrepresentation of underachieving males is a predicament that warrants the nation's attention similarly to the attention the lower achievement and lower interest among females in mathematics and science did three decades ago.

## 11 | LIMITATIONS

We were not able to successfully measure parents' perceptions of students' self-efficacy. The student version of the SAAS-R is frequently used for research; however, the modified scales we created from it for parents and teachers warrant additional validating, as was evident by the unsuccessful self-efficacy factor for parents. In addition, inherent in our interpretation of the results is our assumption that students' evaluation of their own attitudes is more accurate than the evaluations of other stakeholders. However, if students choose not to respond honestly, this may not be the case.

Our voluntary recruiting is a limitation. Volunteers often differ from the general population. Our study population reflected interested and caring teachers and parents who were willing to complete our scales. Our lower response rate from parents is a concern. Parents who elected not to participate might be less involved in their children's lives. Our volunteer parents' awareness of their students' perceptions may be more accurate than the perceptions of parents who chose not to participate, which would inflate the correlation coefficients we report.

Our findings align with previous research in that the student responses we received from our sample with the SAAS-R are similar to student responses from similar research with the instrument. However, due to the volunteer nature of our sample, we caution readers about the generalization of these results.

## 12 | SUGGESTIONS FOR FUTURE RESEARCH

Despite these limitations, this study demonstrates that students, parents, and teachers perceive underachievement factors differently from each other, especially with regard to goal valuation. Future empirical work should further examine teachers' and parents' accuracy in predicting students' goal valuation, and then consider how to leverage that information to increase students' goal valuation. Researchers also need to design studies that better understand what makes learning meaningful for one student and not for another.

This current study supports school psychologists' efforts in guiding important conversations as researchers design and implement interventions. Counselors and school psychologists can collect and synthesize data to inform intervention design, including data from students, parents, and teachers as well as achievement data and specific student interest information. These data should guide conversations to ensure academic achievement for all students.

This research suggests that efforts to build young females' confidence need to continue. Future research on best practices to increase young women's confidence continues to be needed. Research is also warranted to determine if the general pattern we found with self-efficacy differs by specific academic domains (e.g., mathematics and language arts). Finally, future research should continue to explore the gender differences in the numbers of males and females who are identified as underachievers. Do fewer females actually underachieve, and if so, why? Alternatively, are underachieving females overlooked by their teachers because they tend to exhibit lower self-efficacy than underachieving males?

Whitmore (1980) noted over three decades ago that "The final choice [to achieve], obviously, is the child's; he or she must want to change and believe the effort will be rewarded by sufficient success and personal satisfaction" (p. 69). School psychologists can play an important role in better understanding factors motivate underachieving students' desire to change and what parents and teachers can do to help underachieving gifted students find school more meaningful.

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## ORCID

Del Siegle  <http://orcid.org/0000-0001-5579-9217>

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