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RESEARCH ON PERFECTIONISM AND ACHIEVEMENT MOTIVATION: IMPLICATIONS FOR GIFTED STUDENTS

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Perfectionism has been associated with a rigid adherence to impossibly high standards, an irrational importance on the attainment of these standards, and a tendency to overgeneralize failures. Researchers have primarily focused on how perfectionism predicts psychological adjustment; yet, recent research also indicates that perfectionism impacts students' achievement motivation. In this article, research on the relationship between perfectionism and achievement motivation in non-gifted students is reviewed. Conclusions about perfectionism and achievement motivation in non-gifted students will highlight directions for future research and implications for enhancing the achievement motivation of gifted students with perfectionism. © 2012 Wiley Periodicals, Inc.

Perfectionism has been associated with rigid adherence to impossibly high standards, irrational importance on the attainment of these standards, overgeneralization of failures, and engagement in all or none thinking (Burns, 1980; Flett & Hewitt, 2006; Frost, Marten, Lahart, & Rosenblate, 1990; Hewitt & Flett, 1991; Pacht, 1984). Because some gifted students have impossible standards for achievement and extreme reactions to academic failure, the study of perfectionism has received extensive attention in the field of gifted education. Although no empirical evidence supports the notion of the incidence of perfectionism as higher among gifted students (e.g., Baker, 1996; Parker & Mills, 1996; Parker, Portesova, & Stumpf, 2001; Roberts & Lovett, 1994), this topic has generated research on different types of perfectionism, developmental precursors, and correlates in gifted students. Of particular interest to educators is how perfectionism influences achievement motivation among gifted students. Achievement motivation involves the need and drive for success, and developing ways for educators to enhance achievement motivation in gifted students with perfectionism are crucial. To date, however, little research has examined perfectionism and achievement motivation in gifted students (Speirs Neumeister & Finch, 2006).

In the academic domain, relationships between perfectionism and achievement motivation were associated with test anxiety, academic satisfaction, and academic performance in non-gifted students (Eum & Rice, 2011; Gaudreau & Thompson, 2010; Hanchon, 2010; Miquelon, Vallerand, Grouzet, & Cardinal, 2005; Stoeber, Feast, & Hayward, 2009; Vansteenkiste et al., 2010; Verner-Filion & Gaudreau, 2010). Because of the importance of these outcomes (i.e., test anxiety, academic performance) for gifted students, this literature review focused only on research related to academic achievement motivation and did not include the literature on perfectionism and achievement motivation within the sports domain (see Stoeber, 2011 for a review).

A thorough review of perfectionism and achievement motivation research on non-gifted students will inform the direction of future research on this topic in gifted populations. To draw parallels, the major sections of the article go back and forth between discussions of research with non-gifted and gifted students. We have organized the content into three major sections: perfectionism in non-gifted students, perfectionism in gifted students, and the relationship between perfectionism and achievement motivation in non-gifted students. Research studies that have examined perfectionism and achievement motivation are summarized in Tables 1 and 2. As our goal is to inform future research and practice with gifted students, we also discuss directions for future research and implications for gifted education.

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Table 1
Summary of Research on Perfectionism and Intrinsic and Extrinsic Motivation in University Students in the Academic Domain

Study	Sample	Perfectionism Measure and Dimensions	Motivation Measure and Dimensions	Pattern of Results
Gaudreau & Thompson (2010)	397 Undergraduates	Brief version of two perfectionism questionnaires (Frost et al., 1990; Hewitt & Flett, 1991) used to create four groups: personal standards, evaluative concerns, mixed profile, and non-perfectionist	Academic Motivation Scale (Vallerand et al., 1993): intrinsic motivation, identified regulation, introjected regulation, external regulation, amotivation (dimensions used to create an index)	PS group had significantly higher intrinsic motivation than the EC group
Mills & Blankstein (2000)	207 Undergraduates	Hewitt & Flett (1991): self-oriented and socially prescribed	Work Preference Inventory (Amabile et al., 1994): intrinsic motivation and extrinsic motivation	SOP and SPP: EM (+) SPP: IM (−)
Miquelon et al. (2005)	166 Undergraduates	French version of Hewitt & Flett (1991): self-oriented and socially prescribed	Academic Motivation Scale (Vallerand et al., 1993): intrinsic (sum of intrinsic and identified) and external motivation (introjected + external)	SOP: IM (+) SPP: EM (+)
Stoeber et al. (2009)	105 Undergraduates	Hewitt & Flett (1991): self-oriented and socially prescribed	Sheldon & Elliot (1999): intrinsic, identified, introjected and external motivation	SOP: IM (+) SPP: EM (+) and IM (−)

Note. PS = personal standards; EC = evaluative concerns; SOP = self-oriented perfectionism; SPP = socially prescribed perfectionism; EM = extrinsic motivation; IM = intrinsic motivation.

Perfectionism in Non-Gifted Students

Although initially conceptualized as a unidimensional construct (Burns, 1980), researchers generally agree that perfectionism is more accurately conceptualized as a multidimensional construct (Frost et al., 1990; Hewitt & Flett, 1991; Slaney, Rice, Mobley, Trippi, & Ashby, 2001). Although perfectionism researchers have used different conceptualizations of perfectionism (see Stoeber & Otto, 2006 for a review), research on perfectionism and achievement motivation has mainly relied on two of these conceptualizations (Frost et al., 1990; Hewitt & Flett, 1991). Hewitt and Flett (1991) have focused on the origin of perfectionism and conceptualized three different types of perfectionism: self-oriented (those holding unrealistic expectations of themselves); socially prescribed (those perceiving that others have unrealistic expectations of them, regardless of the accuracy of their perceptions); and other-oriented (those holding unrealistic expectations for others). However, other-oriented perfectionism and its relationship to achievement motivation have not been examined (see Tables 1 and 2).

In contrast to different types of perfectionism, Frost and colleagues (1990) have focused on how perfectionism is manifested from the dimensions of personal standards, organization, parental

Table 2
Summary of Research on Perfectionism and Achievement Goals in School and University Students in the Academic Domain

Study	Sample	Perfectionism Measure and Dimensions	Achievement Goals Measure and Dimensions	Pattern of Results
Eum & Rice (2011)	134 Undergraduates	Almost Perfect Scale-Revised (Slaney et al., 2001): adaptive and maladaptive	Achievement Goal Questionnaire (Elliot & McGregor, 2001): mastery approach, mastery avoidance, performance approach, performance avoidance	AP: MAP (+) and PAP (+) MP: MAV (+), PAP (+) and PAV (+)
Fletcher et al. (in press)	367 Undergraduates	Frost MPS (Frost et al., 1990): personal standards, organization, concern over mistakes, doubts about actions	Achievement Goal Questionnaire (Elliot & Murayama, 2008): mastery approach, performance approach, and performance avoidance	PS: MAP (+), PAP (+) and PAV (+) O: MAP (+) and PAP (+) COM: PAP (+) and PAV (+) DAA: MAP (−) and PAP (−)
Hanchon (2010)	180 Undergraduates	All six subscales of the Frost MPS (Frost et al., 1990) used to create three groups: adaptive, maladaptive and non-perfectionist	Patterns of Adaptive Learning Styles (Midgley et al., 2000): mastery approach, performance approach, and performance avoidance	MP group had higher PAP and PAV than AP group
Speirs Neumeister & Finch (2006)	265 Freshman honor students	Hewitt & Flett (1991): self-oriented and socially prescribed	Achievement Goal Scale (Elliot & Church, 1997): mastery approach, performance approach, and performance avoidance	SOP: MAP (+) and PAP (+) SPP: PAP (+) and PAV (+)
Van Yperen (2006)	333 Undergraduates	Hewitt & Flett (1991): self-oriented and socially prescribed	Achievement Goal Questionnaire (Elliot & McGregor, 2001): mastery approach, mastery avoidance, performance approach, and performance avoidance	SOP: MAP (+), PAP (+), and PAV (+) SPP: PAP (+) and PAV (+)
Verner-Filion & Gaudreau (2010)	198 Undergraduates	Brief version of (Hewitt & Flett, 1991): self-oriented and socially prescribed	School Achievement Goal Scale (submitted): mastery approach, performance approach, and performance avoidance	SOP: MAP (+), PAP (+), and PAV (+) SPP: PAP (+) and PAV (+) and MAP (−)

Note. AP = adaptive perfectionism; MAP = mastery approach goals; MP = maladaptive perfectionism; MAV = mastery avoidance goals; PAP = performance approach goals; PAV = performance avoidance goals; PS = personal standards; O = organization; COM = concern over mistakes; DAA = doubts about actions; MPS = multidimensional perfectionism scale; SOP = self-oriented perfectionism; SPP = socially prescribed perfectionism.

expectations, parental criticism, concern over mistakes, and doubts about actions. After this initial conceptualization, the utility of organization and the two parental subscales in defining perfectionism were questioned (Frost, Heimberg, Holt, Mattia, & Neubauer, 1993; Stoeber & Otto, 2006). Organization has been rarely included in research on perfectionism and achievement motivation (Fletcher, Shim, & Wang, in press) and, to our knowledge, parental expectations and criticism have been examined in one study (Hanchon, 2010; see Table 2).

Regardless of the conceptualization of perfectionism, researchers have often discussed perfectionism as adaptive, healthy, or positive (i.e., self-oriented, personal standards, organization) or maladaptive, unhealthy, or negative (i.e., socially prescribed, concern over mistakes, doubts about actions, discrepancy). A substantial debate on the use of such terms (Flett & Hewitt, 2006; Owens & Slade, 2008; Slade & Owens, 1998) prevails in the literature. Flett and Hewitt (2006) disagree with the notion of adaptive perfectionism and instead, cite research that supports the debilitating impact of both types of perfectionism. Despite this position, other researchers have documented that maladaptive perfectionism has been associated with poor adjustment outcomes, whereas adaptive perfectionism has often been associated with desirable outcomes (Stoeber & Otto, 2006). Terms such as "adaptive" and "maladaptive" likely stem from a research agenda focused on predicting psychological adjustment measures, such as self-esteem, stress and coping, affect and depressive symptoms (Stoeber & Otto, 2006). Similarly, psychological adjustment and personality measures have also been used to classify gifted students as having adaptive or maladaptive perfectionism (Dixon, Lapsley, & Hanchon, 2004; Parker, 1997; Parker et al., 2001).

Perfectionism in Gifted Students

Perfectionism research in the gifted education literature has also supported the notion of adaptive and maladaptive perfectionism. Parker (1997, 2002) identified three different perfectionism typologies using the Frost et al. (1990) scale within middle-school gifted students. Students in the non-perfectionism group (i.e., low scores on personal standards, parental expectations, and organization) scored the lowest on a measure of conscientiousness. Students in the healthy perfectionism group (i.e., low scores on concern over mistakes, parental criticism, and doubts about actions) scored the lowest on neuroticism, but highest on extroversion, agreeableness, and conscientiousness (Parker, 1997). Students in the dysfunctional perfectionism group (i.e., high scores on concern over mistakes, personal standards, parental expectations, parental criticism, and doubts about actions) scored the highest of all three groups on measures of neurosis and openness to experience and lowest on agreeableness.

Parker found this typology with other samples (Parker & Mills, 1996; Parker et al., 2001), and research on gifted middle-school students utilizing different measures of perfectionism also mirror these findings (Schuler, 2000). Similar perfectionism groups were found with a sample of older, gifted adolescents (Dixon et al., 2004), with the exception of another group having pervasive perfectionism (high scores on organization, personal standards, concern for mistakes, and parental expectations). Students in the pervasive perfectionism group, similar to the group with maladaptive perfectionism, reported more psychological symptoms and dysfunctional coping (Dixon et al., 2004). Additionally, gifted middle-school students were classified as having adaptive or maladaptive perfectionism based on their scores on the Slaney et al. (2001) Almost Perfect Scale-Revised (LoCicero & Ashby, 2000; Vandiver & Worrell, 2002). But similar to the research on non-gifted students, conclusions about the use of terms such as "healthy" and "adaptive" have been based on measures related to personality (Parker, 1997) and psychological adjustment (Dixon et al., 2004).

Relationship Between Achievement Motivation and Perfectionism in Non-Gifted Students

In addition to adjustment and personality measures, achievement motivation measures provide another set of outcomes to evaluate the impact of perfectionism on students' functioning (Eum & Rice, 2011; Fletcher et al., in press; Gaudreau & Thompson, 2010; Hanchon, 2010; Miquelon et al, 2005; Speirs Neumeister & Finch, 2006; Stoeber et al., 2009; Vansteenkiste et al., 2010; Van Yperen, 2006; Verner-Filion & Gaudreau, 2010). Perfectionism and achievement motivation research has been primarily based on two different approaches to the study of achievement motivation: self-determination theory (SDT) and achievement goal theory (Elliot, 2005; Elliot & McGregor, 2001; Ryan & Deci, 2000, 2009). Both theories attempt to explain why students seek achievement. Achievement goal theory is focused on the intersection between how students evaluate their performance (i.e., relative to oneself or others) and the strength of a desired outcome (i.e., desiring a positive outcome vs. avoiding a negative outcome). SDT research is focused on intrinsic and extrinsic motivation and the extent to which behavioral regulation is autonomous or controlled.

According to SDT, students are intrinsically motivated when they engage in academic tasks out of curiosity, interest, challenge, and/or enjoyment (Ryan & Deci, 2000, 2009). Yet students often face academic tasks and subjects that they do not find interesting and/or enjoyable. Students' completion of academic tasks more often than not requires promoting extrinsic motivation, but how much students have either internalized or integrated the value and behavioral regulation of the task may vary. Students who do not find an academic task enjoyable (e.g., math homework) but nevertheless recognize that additional practice will contribute to learning, have identified with the value of this task (i.e., identified regulation). Students may also identify with the task and fully integrate the value and regulation of the task into their sense of self (i.e., integrated regulation). Although identified and integrated regulations are related to extrinsic motivation, students' behavior is regulated in an autonomous manner based on internal needs and values. Consequently, these types of regulation are considered to be closer to intrinsic motivation.

Students who have not internalized and/or integrated behavioral regulations are operating from pressure from and/or obligation to others or the self. When students engage in academic tasks for reasons related to deadlines, punishments, and/or pressure from others, their behavior is motivated for external reasons (i.e., external regulation). Students may also apply internal pressure to maintain a sense of self-esteem and/or avoid self-criticism. In these instances, students have not fully accepted the value of the task, but rather have internalized the external forces that previously motivated their behavior (i.e., introjected regulation). Thus, external and introjected regulations of behavior are controlled regulations in line with extrinsic motivation.

Researchers have documented the relationship between perfectionism and intrinsic and extrinsic motivation using self-determination as a theoretical approach (Gaudreau & Thompson, 2010; Miquelon et al., 2005; Stoeber et al., 2009). A summary of the methods and pattern of findings for these studies is presented in Table 1. To examine intrinsic and extrinsic motivation and perfectionism, researchers often have measured the four different types of regulation—intrinsic, identified, introjected, and external (Stoeber et al., 2009)—or used these subscales to create an index of self-determined motivation (Gaudreau & Thompson, 2010; Mills & Blankstein, 2000; Miquelon et al., 2005). Each of these studies used the Hewitt and Flett (1991) model of perfectionism (Gaudreau & Thompson, 2010; Mills & Blankstein, 2000; Miquelon et al., 2005; Stoeber et al., 2009). Self-oriented perfectionism was positively related to intrinsic motivation, whereas socially prescribed perfectionism was positively related to extrinsic motivation (Miquelon et al., 2005; Stoeber et al., 2009). Socially prescribed perfectionism also had a negative relationship with intrinsic motivation in two studies (Mills & Blankstein, 2000; Stoeber et al., 2009). Consistently, self-oriented perfectionism was

positively related to intrinsic motivation, whereas socially prescribed perfectionism was positively related to extrinsic motivation.

Similar to the research on self-determination theory, achievement goal researchers have also sought to understand why students strive for achievement. Central to the discussion on achievement motivation is goal orientation. Elliot (1999) defined a 2 × 2 goal orientation framework based on the intersection of competence and valence. Students evaluate their competence relative to different standards related to either mastery (i.e., learning for oneself) or performance (i.e., comparison of one's performance in relation to others). Mastery standards may be set by students themselves (e.g., increasing knowledge in math) or they may be fixed (e.g., earning 80% on a math exam). Students then evaluate their competence based on their ability to meet the particular standard. In contrast, students may set their standards relative to other peoples' performance and then evaluate how well they perform compared with others (i.e., performance).

The second dimension of achievement orientation refers to valence, the strength of students' desire for a particular outcome. Positive valence is defined as a strong desire for an outcome (i.e., approach), whereas negative valence is defined as a strong aversion to an outcome (i.e., avoidance). In terms of achievement orientation, competence and valence can be crossed to yield four different achievement orientations: mastery approach (desire to meet intrapersonal or fixed goals, such as getting a 5 on an Advanced Placement exam), mastery avoidance (desire to avoid losing an intrapersonal or fixed goal, such as a desire to keep a professional certification current), performance approach (desire to appear competent relative to others, such as the desire to be valedictorian), and performance avoidance (desire to avoid appearing incompetent relative to others, such as the desire to be accepted into the same college as friends). As the theory was originally conceptualized without mastery avoidance (Elliot & Church, 1997), most research to date has focused on the other three orientations. Mastery avoidance goals also require that students have first gained mastery, so this type of goal may be more common among older people. In the current review, only one study examined mastery avoidance goals (Van Yperen, 2006).

Researchers have investigated the relationship between perfectionism and three different types of achievement goals (Eum & Rice, 2011; Fletcher et al., in press; Hanchon, 2010; Speirs Neumeister & Finch, 2006; Vansteenkiste et al., 2010; Van Yperen, 2006; Verner-Filion & Gaudreau, 2010). A summary of the methods and pattern of findings for these studies is presented in Table 2. Several of these studies used the Achievement Goal Questionnaire (Elliot & McGregor, 2001) to examine mastery approach, performance approach, and performance avoidance. Studies on achievement goal orientation have mainly employed the Hewitt and Flett (1991) or the Frost et al. (1990) measures of perfectionism. To draw conclusions within the literature on perfectionism, self-oriented perfectionism is often considered parallel to the dimensions of personal standards and organization (i.e., adaptive perfectionism) and socially prescribed perfectionism as parallel to the dimensions of concern over mistakes and doubts about actions (i.e., maladaptive perfectionism).

Self-oriented perfectionism was positively related to mastery approach and performance approach goals across studies (Speirs Neumeister & Finch, 2006; Van Yperen, 2006; Verner-Filion & Gaudreau, 2010) and, albeit less consistently, was positively related to performance avoidance goals (Van Yperen, 2006; Verner-Filion & Gaudreau, 2010). Similarly, adaptive perfectionism was positively related to mastery approach and performance approach goals (Eum & Rice, 2011).

Across all of the relevant studies, socially prescribed perfectionism and maladaptive perfectionism were positively related to performance approach and performance avoidance goals (Eum & Rice, 2011; Hanchon, 2010; Speirs Neumeister & Finch, 2006; Vansteenkiste et al., 2010; Van Yperen, 2006; Verner-Filion & Gaudreau, 2010). There was no relationship or a negative relationship reported between socially prescribed perfectionism and the adoption of mastery approach goals (Verner-Filion & Gaudreau, 2010).

Interestingly, studies that have used the Frost measure (Frost et al., 1990) did not find consistent relationships between adaptive perfectionism and mastery approach goals. No differences were found between groups of adaptive and maladaptive perfectionists for mastery approach goals (Hanchon, 2010). Adaptive and maladaptive perfectionism are correlated with performance approach goals but not mastery approach goals (Vansteenkiste et al., 2010). When the dimensions of the Frost measure of perfectionism (Frost et al., 1990) were examined separately, the dimensions had different patterns of relationships to achievement goals. Organization was positively related to mastery approach goals and performance approach goals, and doubts about actions had the opposite pattern (Fletcher et al., in press). Concern over mistakes was positively related to performance approach and avoidance goals, and personal standards were positively related to mastery goals, performance approach goals, and performance avoidance goals.

To summarize, self-oriented perfectionism was related to the adoption of mastery approach goals, performance approach goals, and performance avoidance goals, and socially prescribed perfectionism was related to the adoption of performance approach and performance avoidance goals. When researchers relied on the Frost measure (Frost et al., 1990), adaptive perfectionism was not associated with mastery approach goals (Hanchon, 2010; Vansteenkiste et al., 2010). Consistently, socially prescribed perfectionism and maladaptive perfectionism (concern over mistakes and doubts about actions) showed no relationship to the adoption of mastery goals.

Directions for Future Research and Implications for Gifted Students

Self-determination theory and achievement goal theory have stimulated research on the relationship between perfectionism and achievement motivation. However, any conclusions drawn from the research on perfectionism and achievement motivation are tentative. To more fully understand the relationship between perfectionism and achievement motivation, several methodological limitations need to be addressed in future research. Participants have almost exclusively included university students, with one study including high school students (see Tables 1 and 2). Research with children and adolescents, as well as different populations of students such as gifted students, is needed. Additionally, research in the academic domain on achievement goals and perfectionism should include mastery avoidance goals, given that this goal may be particularly relevant to perfectionism (Elliot, 2005). Perhaps most crucial are longitudinal studies to examine the causal relationships between perfectionism and achievement motivation.

Despite the limitations of research on perfectionism and achievement motivation, a general trend in non-gifted students emerged: self-oriented and adaptive perfectionism had more optimal motivational profiles (i.e., intrinsic motivation and mastery and performance approach goals), and socially prescribed and maladaptive perfectionism had less positive motivational profiles (i.e., extrinsic motivation and performance approach and avoidance goals). Clearly, more research is needed to determine whether this pattern holds for gifted students. However, assuming that the general trend between perfectionism and achievement motivation is similar, there are important implications for gifted students. Research has documented that gifted students have higher intrinsic motivation than do non-gifted students (Vallerand, Gagne, Senecal, & Pelletier, 1994). However, in the current review, socially prescribed perfectionism was positively correlated with extrinsic motivation in non-gifted students. Socially prescribed perfectionism in gifted students may also dampen intrinsic motivation and increase extrinsic motivation. Within a sample of high-ability students, external regulation of motivation was detrimental to school engagement, with students who were externally motivated reporting being anxious, angry, and bored and avoiding school more than internally motivated students (Miserandino, 1996). Thus, educators should be cautioned that gifted students' perfectionistic tendencies related to trying to please their parents and teachers are beneficial. These tendencies may mask underlying negative feelings related to school that may become more pronounced over time.

Students' adoption of different achievement goals may also be related to fewer positive feelings about academics and academic performance. Mastery approach goals have been linked to better learning outcomes (Elliot, 2005), whereas performance avoidance goals have been linked to lower levels of achievement (Church et al., 2001). Performance approach goals have shown relationships to positive outcomes (i.e., higher grades) and negative outcomes (i.e., test anxiety; see Harackiewicz, Barron, Pintrich, Elliot, & Thrash, 2002, for a review). Whereas students with perfectionism may endorse mastery goals, they also likely endorse performance goals, including the detrimental performance avoidance goals. Thus, the success of gifted students with perfectionism may come at a high price: seeking achievement to meet high standards while suffering from self-doubt and fear of failure. Maladaptive perfectionism did not relate to the adoption of mastery goals (Vansteenkiste et al., 2010; Verner-Filion & Gaudreau, 2010). Gifted students with maladaptive perfectionism may not focus on their interpersonal competence but, instead, may focus on comparisons with others. Gifted students with perfectionism may likely be pleased with how they compare with other students in their early school years and high school. Once these students get into schools or colleges with other gifted students, however, they are at increased risk for stress and anxiety related to their perfectionism if they solely evaluate their competence relative to other students (Speirs Neumeister, Williams, & Cross, 2007).

Based on this review of the literature, educators should be cautioned about their inferences about the psychological well-being of gifted students on the basis of their high levels of achievement. Indeed, teachers and counselors may mistakenly believe that high-performing gifted students "have it all together," praising their high achievement as indicative of their ability to achieve their goals. Although this may be true in the case of highly conscientious students (or "positive perfectionists," if you will), it may also be true of students suffering from perfectionism that may be associated with anxiety, depression, excessive concern over mistakes, fear of failure, and self-worth contingent on achievement. Thus, educators may need to take a closer look at these students and be prepared to intervene when necessary.

Considering the research related to approach and avoidance temperaments, Elliot and Thrash (2010) emphasize that, despite these potential innate tendencies, "through the processes of socialization, maturation, and personal growth, individuals may learn how to manage their temperamental proclivities by using goals in strategic fashion" (p. 815). This statement has direct relevance for individuals working with gifted students; with careful guidance and feedback, educators may assist gifted individuals in setting and meeting achievement goals that override their tendency for avoidance. Future research on the type and efficacy of such strategies is warranted.

Early identification and counseling of gifted students struggling with perfectionism will be critical in forming healthy self-beliefs and achievement goals that will allow gifted students to realize their full potential. To effectively identify these students, an understanding of leading theories of motivation, as well as the intersection of motivation and perfectionism, is necessary.

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