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Emily Mofield
Sumner County Schools

Megan Parker Peters
Lipscomb University

Sumita Chakraborti-Ghosh
Tennessee State University

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Article

Perfectionism, Coping, and Underachievement in Gifted Adolescents: Avoidance vs. Approach Orientations

Emily Mofield ^{1,*}, Megan Parker Peters ² and Sumita Chakraborti-Ghosh ³

¹ Gifted Services, Sumner County Schools, 695 E. Main St., Gallatin, TN 37066, USA

² College of Education, Lipscomb University, 1 University Park Dr., Nashville, TN 37204, USA; mparkerpeters@lipscomb.edu

³ College of Education, Tennessee State University, 3500 John A Merritt Blvd, Nashville, TN 37209, USA; schakraborti@tnstate.edu

* Correspondence: emily.mofield@sumnerschools.org; Tel.: +1-615-451-5414

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Abstract: Perfectionism can influence how one approaches challenges and deals with setbacks, and, consequently, can inhibit or facilitate achievement. The present study (1) explored the relationship between Frost's six dimensions of perfectionism and five types of coping strategies; (2) examined how dimensions of perfectionism predict coping in response to academic stress; and (3) investigated differences between gifted underachievers and other gifted students on perfectionism and coping among 130 American gifted students in grades 6–8. Results of stepwise regression models revealed approach coping was predicted by adaptive perfectionism (Positive Strivings-notably Organization), whereas avoidance coping (Internalizing, Externalizing, and Distancing) was predicted by various combined models. Gifted underachievers displayed lower Positive Strivings perfectionism scores and lower positive coping when compared to achievers. This information is helpful when considering ways to guide gifted students to high levels of academic achievement while utilizing adaptive approaches.

Keywords: perfectionism; coping; gifted; underachievement; positive strivings; evaluative concerns; approach coping; avoidance coping; academic stress

1. Introduction

When discussing characteristics of giftedness, perfectionism is often a part of the conversation [1–3]. Though it seems intuitive that gifted students display higher rates of perfectionism at more prevalent rates than the general population, given that they can conceivably reach perfection with their talents (e.g., [4]), research shows that gifted students do not necessarily have higher rates of perfectionism [5]. Some studies actually show that gifted students score more favorably on adaptive dimensions of perfectionism [6,7] compared to other groups. Still, many gifted students do display concerning qualities of unhealthy perfectionism [8–11]. It is theorized that this population exhibits perfectionism for a number of reasons. Gifted students set their expectations based on their mental age rather than their chronological age. They also compare themselves with their preferred peers, who are often older, and, consequently, set higher standards for themselves [12]. The unique social-emotional needs of giftedness, such as heightened sensitivity to expectations, emotional intensities, and overexcitability, can also influence the manifestation of perfectionism [2,3,13]. Additionally, in the regular education classroom, gifted students may set a personal bar of perfection in order to create academic challenge, often in response to unchallenging curriculum in early schooling years [3,14].

In gifted education, much focus has been given to the factors that play a role in shaping ability into high performance [15]. Competing models reflect varied ideas regarding factors that influence talent trajectories. Tannenbaum proposed that five components (general ability, specific ability, psychosocial ability, external support, and chance) were necessary to support the development of potential into exceptional ability/giftedness [16]. Tannenbaum suggested that varying strengths of the five components were necessary depending on the individual's level of general ability, individual talents, social skills, and opportunities for support. Renzulli's talent development model also targets multiple components with the aim of developing giftedness [17]. His enrichment-triad model targets cognitive ability, creativity, and task commitment and focuses on creating appropriate educational experiences that will facilitate talent development via three stages: (1) enrichment opportunities in a variety of areas; (2) appropriately advanced content in topics of interest; and (3) opportunities to express creativity [17]. Among these models and others, the goal is on developing high levels of talent, which can be actualized as accomplishment [15,18,19]. Any factor that might inhibit this trajectory (e.g., perfectionism, avoidance coping, and underachievement) is important to address.

Most recently in a monograph describing a mega-model of talent development, Subotnik, Olszewski-Kubilius, and Worrell emphasized "qualities such as the willingness to take strategic risks, the ability to cope with challenges and handle criticism, competitiveness, motivation, and task commitment will differentiate those students who move to increasingly higher levels of talent development from those who do not" [15] (p. 40). Therefore, it is important to further examine these issues among gifted students, especially when they inhibit achievement. As such, perfectionism is concerning when it leads to procrastination, compulsive behaviors, the fear of failing, and the avoidance of difficult tasks and challenges [2,20,21]. High-ability students do not always love learning, seek effort, and persevere through challenges; rather, they are often the most worried about failure [22]. Given that many gifted students hold high standards for themselves and perceive high expectations from others, it is important to understand how perfectionism might influence how they handle obstacles and cope with perceived academic failure. Furthermore, the field needs a clearer understanding of how perfectionism relates to underachievement. While many theorize that perfectionism can influence underachieving behaviors [2,23], research is needed to further establish this link. Understanding how perfectionism interacts with coping responses to academic stress and manifests in underachieving students can help educators and advocates support gifted learners so that they can be positively guided towards advanced levels of achievement.

2. Perfectionism

The construct of perfectionism is the striving towards an exceptionally high standard [24,25]. It is widely regarded as multidimensional and is associated with both adaptive and maladaptive outcomes [20,24,25], an idea that has been largely accepted by the field of gifted education [5,8–10,12,26–30]. Multidimensional perfectionism theory was catalyzed by Hamachek, who believed that perfectionism existed on a continuum of neurotic to normal thoughts and behaviors [31]. Normal (healthy) perfectionists can enjoy work in progress (rather than completion only), recognize and accept personal limitations, and are motivated by goals of personal excellence rather than absolute perfection. However, neurotic (unhealthy) perfectionists fear failure, are performance-driven, and never feel satisfied with personal performance, as it never lives up to idolized perfection.

As a result of the development of the multidimensional perfectionism theory, various models and assessment tools have been developed to measure positive and negative dimensions of perfectionism [25,32–34]. Hewitt and Flett's model consists of three types: self-oriented perfectionists who set high personal standards and evaluate their performance against these standards; socially-prescribed perfectionists who perceive that significant others have high expectations of them; and, other-oriented perfectionists who hold excessive expectations on others [25]. Relevant to the present study, Frost and colleagues' model separates the construct into six dimensions which include: Concern over Mistakes (CM)—equating mistakes with failure and having negative reactions

to failure, Personal Standards (PS)—setting excessively high expectations, Parental Criticism (PC)—the perception of how parents criticize, Doubt of Actions (DA)—doubting the quality of one’s performance, Parental Expectations (PE)—perception of parent expectations, and Organization (O)—preference for order and organization [24]. Stumpf and Parker found Personal Standards and Organization were more closely connected to healthy constructs, such as conscientiousness, order, and endurance [35]. Concern over Mistakes, Doubt of Action, Parent Criticism, and Parental Expectations are associated with maladaptive outcomes and are often referred to as unhealthy dimensions [20,36]. Some research suggests that when high Personal Standards scores are earned in conjunction with unhealthy dimensions, maladaptive behaviors surface [9,13,37].

In more recent discussions of perfectionism, these dimensions have been deconstructed into two factors: Evaluative Concerns and Positive Strivings [36,38–40]; Speirs Neumeister has recommended that gifted education adopt the use of these two central factors that have been defined outside the field of gifted education [12,41]. She explains that because the field is so inconsistent in defining and measuring perfectionism, focusing on these two core facets would improve consistency and provide clarity on the adaptive outcomes associated with Positive Strivings and the maladaptive outcomes associated with Evaluative Concerns. Dimensions reflecting a fear of failure or self-critical tendencies are associated with not reaching a set goal are considered “Evaluative Concerns” (Frost’s Concern over Mistakes, Doubt of Action, Parent Criticism, Parental Expectations, and Hewitt and Flett’s socially-prescribed perfectionism). Frost’s Personal Standards and Organization, and Hewitt and Flett’s self-oriented perfectionism reflect tendencies to strive towards excellence for a goal of success, and are, therefore, termed “Positive Strivings” [12,36,38,39].

Different types of perfectionism can result from the adoption of different achievement motives. These achievement motivations can be rooted in how one views intelligence (as fixed or malleable) and can also direct the types of goals students set to attain. Dweck’s work on self-theories suggests that those who adopt an entity view of intelligence (intelligence is stable and cannot be changed very much) will try to appear smart at all costs, avoid challenges, and view effort as a sign of inability [22,42]. Entity theorists adopt performance goals, which involve winning approval from others, appearing competent, and measuring one’s ability based on performance [43]. On the other hand, incremental theorists (those who view intelligence as malleable and can grow with effort) embrace challenges, value effort, and view setbacks as learning opportunities. Incremental theorists adopt mastery goals and are primarily concerned with learning for the sake of personal competence. A few studies demonstrate that Evaluative Concerns are positively associated with entity/fixed mindset views while Positive Strivings are positively associated with incremental/growth mindset views [11,28,44]. Those with fixed mindsets view failure as a reflection of their intelligence or ability, and therefore react with defensive behaviors, while those with growth mindsets view failure as a cue to refocus strategies on the road to reaching learning goals [22].

Elliot and Harackiewicz expanded Elliot and Dweck’s dichotomous goal orientation theory (mastery and performance goals) to three types of goal-orientation: mastery, performance avoidance, and performance approach [43,45]. Those who adopt performance avoidance goals focus on avoiding potential activities that may lead to feelings of incompetence. Those who adopt performance approach goals are achievement focused and are driven by a need to appear competent. Using this framework, Speirs Neumeister found that gifted college students who earned high scores in the area of socially-prescribed perfectionism were more likely to overemphasize their failures and have performance approach or avoidance goals [29]. Self-oriented perfectionists were more likely to have a mastery goal or performance approach orientation but not performance avoidance. In sum, achievement motivation theories have guided the understanding of how and why some students avoid challenges and setbacks and other students embrace them. Knowing what type of perfectionism is experienced by students can guide educators’ understanding of how these students view ability, effort, challenge, and academic goals. Consequently, this understanding can assist in crafting interventions for students who are not creating or perceiving healthy academic goals.

3. Coping and Perfectionism

Coping strategies are defined as “any and all responses made by an individual who encounters a potentially harmful outcome” in order to reduce or minimize stress [46] (p. 281). To a perfectionist, perceived expectations and academic stress are the potential harmful outcomes that must be handled. Approaching such stress can be influenced by irrational thoughts, and the associated coping strategies are largely influenced by the cognitive structures of perfectionistic thinking. These irrational beliefs are often defined by the words *should*, *ought*, and *must*. Roberts and Lovett provided examples of such thoughts in response to scholastic failure: “I must always perform competently to be accepted by others, I should always get A’s on my work”, and “I am an awful person if I get anything below an A” [47] (p. 241). The rational counterparts of these irrational beliefs would be “I prefer to perform competently on my schoolwork, I always hope to get A’s on my work; but, if I get something below an A, I will be disappointed, but it does not make me an awful person. And, I can cope effectively with the situation” [47] (p. 241). It is the transformation of wishes to absolute needs that result in individuals experiencing distress following a negative event. A gifted child’s self-concept can influence this transformation of wishes and preferences to an absolute need for perfection. Perfection may be needed to maintain feelings of self-worth that are associated with a student’s self-concept of academic competence and superiority [48,49]. However, such maintenance is an impossibility in most cases, leading to disappointing realities. Through a qualitative study, Schuler found that unhealthy perfectionists attempted to avoid mistakes at all costs, not wanting to risk embarrassment or humiliation [10]. These unhealthy perfectionists resorted to less than ideal coping methods, replaying said events in their minds and fixating on details of the mistake when less than perfect performance occurred.

Much like the goal orientation associated with achievement motivation, the coping responses associated with perfectionism may be classified as avoidance or approach orientations. These orientation strategies are conceptualizations of coping based on the work of Roth and Cohen [50]. Avoidance/emotional-focused strategies include behaviors oriented away from the stressor (i.e., distancing, internalizing, and externalizing), and approach strategies are behaviors that directly target the stressor (e.g., seeking social support, problem-solving). Approach coping strategies are related to positive adjustment, while avoidance strategies are related to poorer adjustment [51–53]. Similarly, Dweck has studied two distinct reactions to failure: mastery vs. helpless orientations [22]. Those with mastery orientations are able to persist through failure and remain focused on achieving (much like approach orientations), while those with helpless orientations hold the view “once failure occurs, the situation is out of their control and nothing can be done”, much like avoidance coping [22] (p. 6). Relevant to perfectionism, mistakes are viewed entirely differently by each orientation. Those with mastery/approach orientations see mistakes as cues to continue to use strategies in efforts to work towards mastery while those with helpless/avoidance orientations react with self-doubt, believe that failure measures one’s self-worth, and in many ways give up on achieving a goal. Helpless/avoidance responses are detrimental to a student’s achievement trajectory, as they limit the achievement of a student’s personal goals [22].

The relationship between coping and perfectionism has been explored in a number of studies, mainly with non-gifted populations and university students. Research consistently shows that maladaptive perfectionism/socially prescribed perfectionism is associated with avoidant coping and lower appraisal of problem-solving abilities while adaptive perfectionism is associated with action orientation and problem-focused coping [40,54–59]. Using Frost et al.’s conception of perfectionism, Rice and Lapsley used The Coping Inventory to evaluate university students’ coping responses to stressful events [60]. They found that adaptive perfectionists (typified by high personal standards and organization, moderate parental expectations, low concern over mistakes, doubt of action, and parental criticism) reported more use of problem-focused coping and less use of dysfunctional coping when compared to maladaptive perfectionists (typified by high concern over mistakes, doubt of action, parental criticism, parental expectations, and lower on personal standards and organization).

Maladaptive perfectionists were found to be significantly more emotionally distraught than adaptive or non-perfectionists. Others have found that different types of coping strategies are more helpful to those who have Evaluative Concerns while other coping strategies are more helpful to those with higher Positive Strivings [56,57].

Maladaptive perfectionism and associated coping mechanisms can also impact academic efficacy. Wang and Fu found a significant interaction among discrepancy (self-perception of differences between one's standards and performance), mastery goals, and self-worth on academic self-efficacy among Chinese gifted students in grades 6–12 [61]. They concluded that students with low academic conditions of self-worth may actually have high levels of confidence and care about learning (mastery orientation) more than performing for others. Areas of discrepancy may highlight opportunities for improvement. To protect their self-esteem, however, they may downplay emphasizing the importance of academics or avoid situations where success cannot be guaranteed, as a coping mechanism against perceived difficulties.

In sum, most studies concerning perfectionism and coping have used non-gifted populations or university students (except [55,61]) and have examined general coping in response to stressful events [59], coping in response to daily hassles [40,56,57], or speculated use of avoidance coping mechanisms [61]. Given that gifted students can have more extreme emotional negative reactions to perceived failure when compared to other groups [47], and their self-analytic abilities and high intelligence can influence them to harshly criticize themselves, research is needed on how such patterns of perfectionism and specific coping in response to *academic* stress surface in gifted K–12 populations. Furthermore, there is a recent increased focus on studying the psychosocial variables that enhance resiliency in talent development, notably, how one responds to challenges and setbacks (e.g., making a bad grade) [15]. This would also be especially telling in light of excessive expectations for performance in America's high-stakes testing climate, where some may argue that more emphasis is placed on performance goals than mastery/learning goals [8]. Much like mindsets (fixed/entity or growth/incremental) and goals (performance vs. mastery) influence how students cope with perceived failure, we believe it is important to further examine how the related dimensions of perfectionism will also influence either constructive coping or disengagement.

4. Underachievement, Perfectionism, and Coping

Indeed, when perfectionism interferes with the risk-taking that quality learning involves, it can keep a gifted student from achieving his or her full potential. Broadly, Gagne has defined underachievement as “gifts that do not develop into talents” [62]. Underachievement is present when students exhibit academic performance that does not meet expectations based on the student's measured potential [63–67]. Others have defined underachievement as simply the discrepancy between expected and actual performance [64,68–77]. Reis and McCoach provided a summary of characteristics of gifted underachievers through a review of research; these characteristics include fearing failure, avoiding challenging experiences to protect their self-image, being self-critical or perfectionistic, feeling guilty about not meeting others' expectations, having poor coping skills, and developing coping responses that “successfully reduce short-term stress, but inhibit long-term success” [72] (p. 159).

Procrastination, fear of failure, an all-or-nothing mindset, paralyzed perfectionism (doing nothing if there is a risk of failure), and workaholism are characteristics of perfectionism that can contribute to underachievement [2,21,23,78]. Perfectionists can be so concerned about making mistakes that instead of taking chances, they resort to “inertia” (a total state of rest). Adderholdt-Elliott explains, “If students never complete projects, they do not have to risk being marked down . . . if these perfectionists never sign up to take advanced classes, they don't have to risk not doing as well as they would in average classes” [23] (p. 20). Moreover, Hill et al. explain that self-oriented perfectionists may use self-handicapping behaviors to protect their sense of self-worth, especially when they experience failure [48]. Consequently, underachievement and perfectionism may serve as defense mechanisms to

avoid the risk of failing. Put another way, the child is equipped with excuses for poor performance when perfectionism seems unattainable.

Perfectionists may resort to underachievement as a means to cope with high standards. Underachievement is often a coping mechanism in response to self-set expectations or expectations imposed from others [2]. Rimm claimed that underachievement is influenced by three main stresses: “(1) the need to be extraordinarily intelligent, the ‘smartest’, or both; (2) the wish to be extremely creative and unique, which can translate into nonconformity; and (3) the concern with being admired by peers for appearance and popularity” [2] (p. 416). As gifted students progress from easy curriculum to more complex curriculum, they may still have high standards and goals for themselves but lack the effort and motivation to reach these standards [2]. The self-defeating thoughts of not being the best can lead a perfectionist to avoid challenging learning experiences altogether. Since the perfectionist’s self-worth is highly associated with achievement [48], he or she might avoid experiences that involve risk [21,23]; thus, they are underachieving by means of avoidance. McCoach and Siegle examined differences between gifted achievers and gifted underachievers on five factors (Academic Self-Perception, Attitudes towards School, Attitudes towards Teacher, Motivation, and Goal Valuation) as measured by the School Attitude Assessment Survey-R [64,79]. They found that while both groups had high scores on academic self-perceptions, they differed substantially in regards to goal valuation and motivation/self-regulation, whereas underachievers had lower mean scores. Their findings suggest, “the key features that distinguish gifted achievers from gifted underachievers are the goals they set for themselves and the effort they put forth to achieve these goals” [64] (p. 151). This is contrary to the aforementioned discussions on how high goals associated with perfectionism relate to underachievement. Additionally, Parker noted that non-perfectionists described themselves as “disorderly”, “distractible”, “forgetful”, and not “organized”, “ambitious”, “efficient”, or “thorough”, suggesting that underachievement may be related to non-perfectionism more so than unhealthy perfectionism [9]. Quantitative analysis is needed to substantiate claims about perfectionism and underachievement.

5. The Current Study

The current study seeks to extend the aforementioned findings for the following reasons:

- (1) While the associations between perfectionism and coping have been studied in previous research efforts with non-gifted populations (e.g., [56,59]), we do not have extensive information as to which specific dimensions of perfectionism and their interactions are predictors of coping strategies in response to *academic* stress among samples of gifted students. Does perfectionism influence a child to employ strategies to approach the problem or does it influence avoidance behaviors which might interfere with achievement trajectories? The present study provides more specific information to the practitioner regarding which specific dimensions of perfectionism are predictors, rather than merely looking at “type” of perfectionism (i.e., healthy, dysfunctional, and non-perfectionist). Additionally, more clarification is needed on how Personal Standards (an adaptive dimension of perfectionism related to Positive Strivings) might predict *both* adaptive and maladaptive outcomes. This understanding would help educators understand that just because a student displays high levels of healthy/adaptive Positive Strivings, there may still be cause for concern if Evaluative Concerns are also high. Investigating the relationship between perfectionism and coping will also illuminate factors that play a key role in developing constructive strategies in the face of setbacks.
- (2) While claims have been made about the association of gifted underachievement and perfectionism, these are often qualitative, from clinical observations. Quantitative investigation is needed to further establish this link, and to our knowledge, no studies have done so. Furthermore, it is useful to understand the types of coping strategies employed by underachievers as compared to others in the sample, helping the field understand how underachievers deal with academic stress. This is especially important since the field of gifted education is focused on shaping

optimal achievement through studying psychosocial factors that facilitate the trajectory of talent development [15,80].

Thus, the purposes of the present study were to examine the relationship between perfectionism and coping in American gifted adolescents, examine the extent to which dimensions of perfectionism were predictors for types of coping, and investigate differences between gifted underachievers and other gifted students on dimensions of perfectionism and coping strategies.

The constructs of the study are defined as follows:

- (1) Perfectionism is the striving for high standards [25]. Perfectionism is a multidimensional construct that includes adaptive and maladaptive motivations and outcomes [38]. The dimensions reflecting a fear of failure or self-critical tendencies associated with not reaching a set goal are considered "Evaluative Concerns" and are measured using Concern over Mistake and Doubt of Action scores on the Goals and Work Habits Survey (GWHS) [81], an adaption of the Frost MPS [24]. "Positive Strivings" reflect tendencies to strive towards excellence for a goal of success and are measured using Personal Standards and Organization scores from the GWHS [12,36,38,39].
- (2) Coping strategies are efforts made to reduce or minimize stress [46]. Avoidance coping strategies include emotion-focused behaviors oriented away from the stressor [50]. This is measured by Externalizing, Distancing, and Internalizing scores from the Self-Report Coping Scale (SRCS) [82]. Approach coping strategies are behaviors that directly target the stressor [50] and are measured by Problem-Solving and Seeking Social Support scales on the SRCS.
- (3) Underachievement is the discrepancy between potential and performance [69,77]. For the present study, we adopt a definition from Reis & McCoach: "Underachievers are students who exhibit 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" [72] (p. 157). To identify underachievers among gifted students (all of which demonstrate high potential through high standardized achievement or intellectual ability scores to be described), it is necessary to determine how to measure "actual achievement" through "class grades and teacher evaluations". As such, the following criteria was used to identify underachievers: any student with a grade of a C or less in one or more classes or any student nominated by his/her teacher who displays underachieving behaviors that are addressed or need to be addressed on gifted IEPs (individual education plan). This includes not turning in work, not completing work, or exhibiting low motivation and/or poor academic performance. It was hypothesized that dimensions of high Evaluative Concerns would interact with low Positive Strivings to predict avoidance coping, and low Evaluative Concerns would interact with high Positive Strivings to predict approach coping (based on [56,59]). Based on the explanations of Adderholdt-Elliott, Adelson and Wilson, Rimm, and characteristics of underachievers described in Reis and McCoach we hypothesized that underachievers would have a higher incidence of unhealthy perfectionism and avoidance coping when compared to others in the sample [2,23,72,78].

6. Methods

6.1. Sample

One hundred thirty middle school students from a suburban school district in the southeastern United States participated in the study. The average home income of the school district is \$69,326. The sample originally included 153 students; however, one participating teacher failed to identify underachievers, therefore 23 students' data were not included in the analysis. Three gifted education teachers (one from each school) sent permission forms home to be signed by parents, asking for volunteer students to complete surveys. Based on a convenient sample of choosing three out of 10 middle schools (three out of 10 head principals agreed to the study), 160 students and three gifted

education teachers were invited to participate (96% assent rate). The sample included 68 (52%) girls, 62 (48%) boys, 23 (18%) in 6th grade, 49 (38%) in 7th grade, 58 (45%) in 8th grade, 115 (88.5%) White, 5 (4%) African American, 5 (4%) Asian, 4 (3%) Hispanic, and 1 (0.5%) identified as other ethnicity. Students qualified for the gifted program based on state identification criteria for giftedness, which included assessments of cognition, achievement, characteristics, and/or creativity.

Students were identified as gifted by meeting one of three options: (1) high IQ (130 or above) and another component (96th percentile or above on one academic achievement test composite score or 90th percentile or higher on two composite scores); (2) IQ of 123–129 and two achievement composite scores above 95th percentile or three achievement composite scores above 90th percentile, and characteristics and/or creative thinking; (3) IQ of 118–122 and three achievement composite areas above 95th percentile or four composite areas above 90th percentile, and characteristics and/or creative thinking. These identified gifted students participated in a five day per week gifted education class that centered around advanced language arts instruction, critical thinking, research, and problem-solving (five days per week for 55 min). Participants completed two survey instruments (to be described) mid-school year during February.

Underachievers. For the purpose of the present study, underachievers were defined as students with high potential who are not performing at an expected level of academic performance. The participating students' gifted education teacher identified underachievers as those who met one of the following criteria: any student with a grade of a C or less in one or more classes or any student nominated by his/her teacher displaying underachieving behaviors to such extent that they are addressed or need to be addressed on students' gifted individual education plans (IEP) (e.g., not turning in work on time, not completing work, displaying low motivation and/or poor academic performance. We should note that all students identified by their teachers as having underachieving behaviors also had a grade of a C in one or more classes, which significantly lessens the influence of teacher bias on valid identification of underachievers. Using a grade of a "C" or "C average" as a measure of identifying gifted underachievers has been used in other studies with gifted students (e.g., [64,83,84]). Thirty-three (25%) students were identified as underachievers. Of the underachievers, this included 6 (18%) girls, 27 (82%) boys, 30 (91%) White, 2 (6%) African American, 1 (3%) Other, 6 (18%) in 6th grade, 16 (49%) in 7th grade, and 11 (33%) in 8th grade. Twenty-six percent of White students and 40% of African American students in our sample were identified as underachievers. By grade, 26% of sampled 6th grade students, 32% of 7th grade students, and 19% of 8th grade students were identified as underachievers.

6.2. Assessment of Perfectionism

Perfectionism was measured by the Goals and Work Habits Survey (GWHS) [81]; The GWHS is an adaptation of the Frost MPS [24]; the verbiage used in some of the response items contains a present verb tense, rather than a past tense as used in the MPS. The GWHS includes 35 response items and implements a five-choice Likert scale. Concern over Mistakes (CM), Parental Expectations (PE), Parental Criticism (PC), and Doubts about Actions (DA) are considered maladaptive tendencies, while Personal Standards (PS) and Organization (O) are adaptive [35,38]. However, some studies indicate that high Personal Standards along with high Concern over Mistakes, Doubts about Actions, Parental Criticism, and Parental Expectations classify unhealthy perfectionists (e.g., [5,8,10,37]). Example items include "It is important for me to be thoroughly competent in everything I do" and "I have extremely high goals". Students were asked to choose a response based on their level of agreement with the item statements. The present study's internal reliability ranged from 0.74 to 0.90 (see Table 1).

Table 1. Means, standard deviations, and internal reliabilities for perfectionism and coping.

Variable	M (SD)	Cronbach's Alpha
Perfectionism (GWHS) ¹		
Concern over Mistakes–	21.58 (6.80)	0.88
Parent Expectations–	17.31 (3.49)	0.84
Parent Criticism–	10.09 (3.65)	0.84
Doubt of Action–	11.36 (3.14)	0.77
Personal Standards+ / –	24.33 (4.94)	0.74
Organization+	21.14 (5.81)	0.90
Coping (SRCS) ²		
Internalizing–	2.18 (0.76)	0.66
Externalizing–	1.74 (0.82)	0.68
Distancing–	2.33 (0.72)	0.69
Social Support+	2.82 (0.82)	0.84
Problem-solving+	3.44 (0.68)	0.84

¹ GWHS reported as raw scores; ² SCRS reported as averaged scores (consistent with literature); + / – refer to adaptive and maladaptive perfectionism, respectively.

6.3. Assessment of Coping Strategies

The Self-Report Coping Scale (SRCS) [82] measured the use of five coping strategies (Seeking Social Support, Problem-Solving, Distancing, Internalizing, and Externalizing) when participants are presented with a specific stressful situation. Participants responded to 34 items on a five-point Likert scale ranging from *none of the time* (1) to *all of the time* (5). While the instrument can be used to measure how children respond to any specific stressor, the present study focused on the academic stressor, “*When I make a bad grade, one worse than I usually get . . .*” Example responses included “*tell a family member or friend what happened*”, “*go off by myself*”, or “*cry about it*”. According to Causey and Dubow test-retest reliabilities were 0.73 for Seeking Social Support, 0.60 for Problem-Solving, 0.64 for Distancing, 0.63 for Internalizing, and 0.69 for Externalizing [82]. The present study’s internal reliability ranged from 0.66 to 0.84 (see Table 1). Causey and Dubow found that Distancing and Externalizing were positively associated with avoidance behaviors, while Seeking Social Support and Problem-Solving were positively related to approach behaviors [82]. Internalizing coping items were found to be positively correlated with both approach and avoidance strategies, suggesting that children may internalize (i.e., worry) before attempting to address (approach) the problem.

7. Results

7.1. Perfectionism and Coping

Descriptive statistics and internal reliability for the GWHS and SRCS are indicated in Table 1. To be consistent with how scores are reported in the literature, perfectionism scores are reported as summed scores, while reported coping scores are average mean scores.

Pearson *r* correlations were used to determine the relationships between specific dimensions of perfectionism and coping strategies. See Table 2. Small to moderate effect sizes were noted for positive correlations between Concern over Mistakes, Doubt of Action, and Personal Standards with Internalizing. Additionally, small to moderate effect sizes were found for the positive correlations between Parental Criticism and Externalizing, Organization and Seeking Social Support, Organization and Problem-Solving, and Personal Standards and Problem-Solving. There was a small to moderate effect size for negative correlations between Organization and Externalizing and Organization and Distancing.

Table 2. Correlations of dimensions of perfectionism and coping orientations.

Perfectionism and Coping Variables	1	2	3	4	5	6	7	8	9	10	11
1. Concern over Mistakes–	1.00	0.46 ***	0.38 ***	0.31 ***	0.49 ***	0.13	0.52 ***	0.20 **	0.01	−0.07	0.20 *
2. Doubt of Action–		1.00	0.28 **	0.49 **	0.07	−0.08	0.39 ***	0.19 *	0.16	−0.11	−0.03
3. Parental Expectations–			1.00	0.67 ***	0.23 **	−0.03	0.29 ***	21 *	0.08	−0.13	0.02
4. Parental Criticism–				1.00	−0.09	−0.31 ***	0.25 **	0.34 ***	0.29 **	−0.29 *	−0.20 *
5. Personal Standards+ / −					1.00	0.51 ***	0.37 ***	−0.06	−0.23 **	0.22 *	0.37 ***
6. Organization+						1.00	0.17	−0.37 ***	−0.36 ***	0.33 ***	0.40 ***
7. Internalizing–							1.00	0.37 ***	0.03	0.23 *	0.42 **
8. Externalizing–								1.00	0.54 ***	−0.22 *	−0.22 *
9. Distancing–									1.00	−0.27 **	−0.31 ***
10. Seeking Support+										1.00	0.58 ***
11. Problem-Solving+											1.00

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

The researchers also employed stepwise regression to determine the extent to which perfectionism dimensions make meaningful contributions to the overall prediction of each dependent variable (five separate coping strategies). Results from these models are important because they tell the practitioner which specific dimensions of perfectionism are predictors, rather than merely looking at “type” of perfectionism revealed through cluster analyses (i.e., healthy, dysfunctional, and non-perfectionist). Cluster analyses, often used in gifted studies of perfectionism typology (e.g., 5,8–10,26,28,37), are context-dependent and may not accurately capture true “healthy and unhealthy” perfectionists within a sample of high perfectionism scores. The regression model allows us to more closely examine specific variable interactions in predicting coping orientations.

An inspection of Variance Inflation Factors (VIF) for each predictor were calculated to test for multicollinearity [85]. VIF ranged from 1.11 to 1.47; thus, multicollinearity was not an issue. Dimensions were added based on the strongest semi-partial correlations (from Table 1) and their consistent theoretical associations [56,59]. Cohen’s guidelines were consulted to interpret effect sizes reported as Adjusted R^2 values [86].

In predicting Internalizing, three significant models were produced (see Table 3). The first model revealed Concern over Mistakes as a significant predictor, accounting for 27% of the variance in Internalizing, $R^2 = 0.27$, $F(1,124) = 45.30$, $p < 0.0001$, Adjusted $R^2 = 0.26$ (large effect). The second model showed Concern over Mistakes and Doubt of Action as combined significant predictors, both accounting for 30% of the variance in Internalizing, $R^2 = 0.30$, $F(2, 123) = 25.8$, $p < 0.0001$, Adjusted $R^2 = 0.28$ (large effect), and the third model showed the interaction of Concern over Mistakes, Doubts about Actions, and Personal Standards as significant predictors for Internalizing, accounting for 32% of the variance on Internalizing, $R^2 = 0.32$, $F(3, 122) = 19.53$, $p < 0.0001$, Adjusted $R^2 = 0.31$ (large effect). There was a positive relationship between Internalizing and all dimensions of perfectionism, with Concern over Mistakes, Doubt of Action, and Personal Standards having the most significant and meaningful correlations.

In predicting Externalizing, two significant models were produced. First, a negative regression line ($\beta = -0.38$) of low Organization scores predicted Externalizing, accounting for 15% of the variance in Externalizing, $R^2 = 0.15$, $F(1, 124) = 21.15$, $p < 0.0001$, Adjusted $R^2 = 0.14$ (moderate effect). In the second model, a combination of high Concern over Mistakes and low Organization predicted Externalizing, $R^2 = 0.21$, $F(2, 123) = 16.06$, $p < 0.0001$, Adjusted $R^2 = 0.19$ (large effect). Pearson r correlations revealed a significant positive relationship between Externalizing and Concern over Mistakes, Parental Expectations, and Parental Criticism and a negative relationship with Organization.

Two models were revealed for predicting Distancing. First, a negative regression line showed that low Organization predicted Distancing, accounting for 13% of its variance, $R^2 = 0.13$, $F(1, 122) = 18.14$, $p < 0.0001$, Adjusted $R^2 = 0.12$ (moderate effect). In the second model, combined low Organization scores with high Parental Criticism scores predicted Distancing, accounting for 16% of the variance, $R^2 = 0.16$, $F(2, 121) = 11.65$, $p < 0.0001$, Adjusted $R^2 = 0.03$.

In predicting Seeking Social Support, two models were revealed. First, Organization predicted Seeking Social Support, accounting for 10% of the variance in Seeking Social Support scores, $R^2 = 0.10$, $F(1, 120) = 13.50$, $p < 0.0001$, Adjusted $R^2 = 0.09$ (moderate effect). In the second model, combined high Organization and low scores on Parental Criticism predicted Seeking Social Support, $R^2 = 0.14$, $F(2, 119) = 9.88$, $p < 0.0001$, Adjusted $R^2 = 0.13$ (moderate effect). This is consistent with correlation results.

Finally, two models were revealed for Problem-Solving. Organization was a significant predictor in the first model, $R^2 = 0.17$, $F(1, 123) = 25.11$, $p < 0.0001$, Adjusted $R^2 = 0.16$ (large effect), and in the second model, a combination of Organization and Personal Standards predicted Problem-Solving, $R^2 = 0.21$, $F(2, 122) = 16.56$, $p < 0.0001$, Adjusted $R^2 = 0.20$ (large effect).

Though we used multiple tests, which can increase likelihood of Type 1 error, estimated observed power values for all significant regression models were 0.96 or above, indicating a likelihood of correctly accepting our hypotheses.

Table 3. The prediction of perfectionism on coping scores: results of step-wise multiple regression analyses (significant models only).

Criterion Variable	Model	Predictor Variable	B	SE B	β	F	R ²	Adjusted R ²	Adjusted R ²
Internalized	Step 1	Concern over Mistakes	0.06	0.19	0.52	45.30 **	0.27	0.26	
	Step 2	Concern over Mistakes x	0.05	0.01	0.43	25.80 **	0.30	0.28	0.02
		Doubt of Action	0.05	0.02	0.19				
	Step 3	Concern over Mistakes x	0.03	0.01	0.31	19.53 **	0.32	0.31	0.03
		Doubt of Action x Personal Standards	0.06 0.03	0.02 0.01	0.24 0.20				
Externalized	Step 1	Organization	−0.05	0.02	−0.38	21.15 **	0.15	0.14	
	Step 2	Concern over Mistakes x	0.03	0.01	0.25	16.06 **	0.21	0.19	0.05
		Organization	−0.06	0.01	−0.42				
Distancing	Step 1	Organization	−0.05	0.01	−0.36	18.14 **	0.13	0.12	
	Step 2	Parental Criticism x	0.04	0.02	0.19	11.65 **	0.16	0.15	0.03
		Organization	−0.04	0.01	−0.30				
Social Support	Step 1	Organization	0.05	0.01	0.32	13.50 **	0.10	0.09	
	Step 2	Parental Criticism x	−0.05	0.02	−0.21	9.88 *	0.14	0.13	0.04
		Organization	0.04	0.01	0.25				
Problem-Solving	Step 1	Organization	0.05	0.01	0.41	25.11 **	0.17	0.16	
	Step 2	Personal Standards x	0.03	0.01	0.24	16.56 **	0.22	0.21	0.04
		Organization	0.03	0.01	0.29				

* $p < 0.001$; ** $p < 0.0001$.

7.2. Comparing Underachievers to Other Gifted Students

Because of the discrepancy between the number of underachievers ($n = 33$) and other gifted students ($n = 97$) Welch's unequal variances t -tests were used to compare dimensions of perfectionism and coping. Results indicated that underachievers earned scores significantly lower on Organization ($t = 5.87, p < 0.001, d = 1.20$; observed power = 0.99), Personal Standards ($t = 5.18, p < 0.001, d = 1.19$; observed power = 0.99) and higher on Parental Criticism ($t = 3.31, p < 0.01, d = -0.65$; observed power = 0.86; all large effect sizes) when compared to other gifted students (See Table 3). Underachievers also scored significantly higher on Externalizing (moderate effect; $t = 2.48, p = 0.02, d = -0.57$; observed power = 0.81) and Distancing (moderate effect; $t = 2.57, p = 0.01, d = -0.57$; observed power = 0.75). Underachievers scored lower on both Approach-oriented coping strategies: Seeking Social Support (moderate effect; $t = 2.35, p = 0.02, d = 0.48$) and Problem-Solving (moderate effect; $t = 3.02, p < 0.001, d = 0.59$; observed power = 0.65) than other gifted students. See Table 4.

Table 4. Welch's t -tests on perfectionism and coping dimensions.

Perfectionism and Coping Variables	Gifted Underachievers M (SD)	Other Gifted Students M (SD)	df	t	p
Perfectionism (GWHS)					
Concern over Mistakes–	20.36 (6.61)	21.86 (6.94)	58	1.11	0.27
Doubt of Action–	16.45 (5.38)	11.09 (3.02)	49	1.38	<0.01 **
Parental Expectations–	17.58 (3.47)	17.15 (3.53)	59	0.58	0.56
Parental Criticism–	11.73 (3.26)	9.49 (3.61)	61	3.31	<0.01 **
Personal Standards+	20.39 (4.20)	25.58 (4.53)	59	5.18	<0.01 **
Organization+	16.45 (5.38)	22.72 (5.03)	52	5.87	<0.01 **
Coping (SRCS)					
Internalizing–	2.04 (0.74)	2.22 (0.76)	54	1.24	0.22
Externalizing–	2.13 (1.17)	1.60 (0.62)	36	2.48	0.02 *
Distancing–	2.66 (0.86)	2.23 (0.64)	41	2.57	0.01 *
Social Support+	2.54 (0.71)	2.91 (0.83)	53	2.35	0.02 *
Problem-solving+	3.14 (0.60)	3.52 (0.68)	57	3.02	<0.01 **

* Statistically significant at 0.05 level; ** Statistically significant at 0.01 level.

8. Discussion

8.1. Perfectionism and Coping

How one responds to challenges, setbacks, and perseveres through obstacles is critical in talent development [15]. Because perfectionism can potentially impact how one copes with academic stress (e.g., making a bad grade), our study examined how various perfectionism dimensions predict how one responds to such setbacks. Our findings revealed that avoidance coping is predicted by combined factors of high Evaluative Concerns (e.g., Concern over Mistakes) and low Positive Striving dimensions (e.g., Organization) while approach coping is predicted mainly by Organization. This indicates that gifted students struggling with aspects of Evaluative Concerns may not have the skills necessary to employ positive coping. Or, perhaps, they do not see the value in employing such skills. However, those displaying adaptive perfectionistic tendencies possess organizational skills and conscientiousness to approach a stressful situation in a positive, productive fashion. This reflects the related lines of thinking in self-theory and goal-orientation research [22,43]) that students who are more focused on learning and believe intelligence is malleable are more likely to employ a variety of strategies in order to master a goal. Thus, the use of organization is likely a constructive strategy a "healthy" perfectionist will use to persist and master a task, even when faced with a setback. Our results warrant attention to not only developing organizational skills, self-regulatory behaviors, and goal-setting strategies, but also emphasizing that these skills are effective tools to persistently employ in the face of setbacks.

Our findings are also consistent with the research of Dixon et al., who found that maladaptive perfectionists (mixed and pervasive) reported “a lower sense of personal security and a pattern of dysfunctional coping” [37] (p. 103). Similarly, in the present study, low confidence in performance (Doubt of Action), high concerns over mistakes (Concern over Mistakes), and high personal goals (Personal Standards) are predictors of internalized avoidance coping. In other words, even when students have high standards for themselves (an adaptive dimension of perfectionism), they may also deal with academic stressors by worrying, crying, or becoming upset (internalized avoidance coping). The pressure to attain the high self-set standards is maximized when the student’s self-worth is tied to reaching these standards, as they are likely to view failure as a reflection of their abilities. As Frost and colleagues noted, there is a fixation over making mistakes in fear of not meeting self-imposed standards [38]. Our findings are important because they demonstrate the interplay of high Personal Standards with Concern over Mistakes, Doubt of Action, and Internalizing coping, providing more clarification on Personal Standards’ association with adaptive *and* maladaptive tendencies. This finding suggests that gifted adolescents who are excessively concerned about mistakes and insecure about their performance should be taught more adaptive ways of dealing with an academic stressor in order to prevent psychological distress. This is a significant contribution of our study. If we had only looked at adaptive and maladaptive perfectionism by grouping the dimensions as Positive Strivings and Evaluative Concerns, and not study the influence of separate dimensions, we could not appreciate interplay of high personal goals with associated maladaptive dimensions. This finding suggests that educators and practitioners must be aware that negative feelings associated with excessive self-criticism may be masked behind seemingly positive strivings. We also found that excessive concerns about mistakes with low preference for order predict externalizing behaviors (taking stress out on others, etc.), suggesting that the stress of not achieving a standard is amplified when one does not have the organizational skills to meet a set goal or does not value the use of organization as a strategy for mastering a set goal.

Organization was a significant predictor for both approach-oriented strategies (Seeking Social Support and Problem-Solving). Not surprisingly, high Personal Standards interacting with high Organization also predicts problem-solving, further validating its association with adaptive functioning. Again, this relates to associated goal orientations and self-theories since organization is viewed as a strategy for persisting through and constructively handling an obstacle in efforts to master a set goal. The interaction of high Organization and low Parental Criticism (or low Organization and high Parental Criticism) was also predictive of Seeking Social Support; this makes sense since an unorganized child is not likely to seek help from those whom he perceives are critical. Low concern for order and organization was a predictor of high Externalizing and Distancing. In other words, individuals without preference for order and organization avoid the stressor through ignoring the situation or reacting emotionally. On the other hand, individuals with high Organization may have the skills necessary to deal with academic stressors without taking their stress out on others or avoiding the problem altogether. Parental Criticism with low organizational skills predict Distancing, implying parent criticism is not effective in helping a child appropriately approach academic stress to achieve success.

While it was hypothesized that Evaluative Concerns would be associated with avoidance coping and Positive Strivings associated with approach, we did not expect higher Concern over Mistakes scores to be associated with high Problem-Solving approach coping. Those who are overly concerned about making mistakes are likely to approach their situation with problem-solving strategies, perhaps as a way to reach their goals. Put another way, those with overly critical tendencies are still likely to use the positive coping strategy of problem-solving (i.e., “try extra hard to keep this from happening again”, “do something to make up for it”, and “go over in my mind what to do or say”) though the problem-solving may be motivated not out of the need to achieve, but the fear of failure [24]. This offers an important implication for teachers and counselors. Even when students appear to be

doing well, as displayed by high achievement and positive coping, they may also be experiencing negative feelings associated with the fear of failure.

In sum, we found that perfectionism and coping patterns (maladaptive perfectionism associated with avoidance coping and adaptive perfectionism associated with approach coping) seen in studies with university students [56,59] are also evident in gifted students, and we extend the research further by examining specific dimensions of perfectionism and their interactions as predictors for coping. These findings support the notion of strengthening the use of organization as a means to reach a set goal, even in the face of setbacks. The healthy aspects of perfectionism can function as effective coping mechanisms in themselves; however, it is also necessary to diminish the self-criticism often associated with high personal standards [37,59,87]. Given the associations between goal orientations, perfectionism, implicit beliefs of intelligence (fixed vs. malleable), self-worth, and helpless vs. mastery-oriented coping, those working with gifted students should foster the development of mastery goal orientations and malleable beliefs about intelligence [22] as a means to help students deal with excessive self-criticism. Recent attention has been given to the need to not only address social emotional issues, but also strengthen psychosocial variables that lead to optimal talent development [15,80,88]. Though our findings must be interpreted cautiously in the context of the study's limitations (to be discussed), our findings illuminate how to enhance resiliency in the face of setbacks (e.g., making a bad grade) through goal-setting, valuing organization as a strategy to meet set goals, and developing positive views towards mistakes (e.g., mistakes indicate I need to adjust my strategy vs. mistakes are an indictment of my ability). In doing so, when gifted students face obstacles on their paths towards high achievement, they will know how to cope with such setbacks in ways that further develop their potential.

8.2. Underachievers

Findings reveal that underachievers in the present study employed more avoidance coping strategies when compared to other gifted students. Additionally, they showed significantly lower Positive Strivings dimensions (both Organization and Personal Standards) and approach-oriented strategies (Problem-Solving and Seeking Social Support). This shows the importance of supporting the development of personal goals, organization, and approach coping strategies for reaching set goals. Intentionally teaching organizational skills and active coping strategies could be instrumental for this group. Such self-regulation skills and constructive strategies can help underachievers persevere through complex tasks, challenges, and setbacks.

Surprisingly, underachievers did not show higher levels of unhealthy perfectionism (Evaluative Concerns). Based on the explanations of Adderholdt-Elliott, Rimm, and characteristics of underachiever summaries provided by Reis and McCoach, it was hypothesized that the rigidity of perfectionistic thinking (as measured through Concern over Mistakes and Doubt of Action) and meeting the expectations of parents would influence underachievement [2,23,72]. However, this was not demonstrated in our data. In fact, most underachievers in the current study would be characterized as non-perfectionists. Within our group, underachievement is not associated with perfectionistic Evaluative Concerns, only that underachievers have *lower* levels of Positive Strivings. This is in line with McCoach and Siegle's findings that gifted underachievers have lower goals and drive to achieve goals when compared to other gifted students [64]. Similarly, it relates to the self-descriptions of non-perfectionists found by Parker: "disorderly", "careless", and "distractible" and not "organized", "reliable", "dependable", and "efficient" [9].

Underachievers earned higher scores on only one dimension of Evaluative Concerns—Parental Criticism, which is consistent with findings indicating that family conflicts occur more often in homes of underachievers [89]. Parents of underachievers are often perceived to be either overly lenient or overly strict; parents may be more punishment-oriented; and, underachievers may wish to disidentify with their parents [68]. Our findings reveal that underachievers feel the tension of parental criticism. Unfortunately, our findings also reveal that Parental Criticism is negatively correlated with approach

coping (i.e., Seeking Social Support) and positively correlated with avoidance coping (i.e., Distancing). Dweck noted that criticism (when not constructive or focused on strategies) will make children more vulnerable in the face of setbacks because children learn that failure is a reflection of a global permanent quality more so than a message to readjust a strategy [22].

This finding could be important in developing whole-child interventions for gifted students who are underachieving or exhibit an avoidance coping style. In addition to suggesting services for gifted students targeting coping skills and underachievement, there should also be an additional parent education component. Parents of gifted students can learn about positive, authoritative parenting practices in addition to the harmful effects of parental criticism, or perceived criticism, on the psyche of gifted students. As Foster notes, "Supporting children by facilitating their accomplishments over time, in ways that are comfortably realistic, well-paced, and personally gratifying can increase their motivation and enable them to face tasks sensibly and responsibly. This approach enables them to develop a mastery orientation and take pleasure in setting and meeting high standards for themselves" [21] (p. 132). A supportive, authoritative approach to parenting could help foster healthy goal orientations and standards in gifted students.

Though we did not investigate the reasons behind avoidance coping styles in underachievers, questions for future studies emerged: Why are underachieving students not approaching their stress in healthier ways? What value do they perceive by avoiding stress? Do they think that by avoiding the stressor that they will not have the pain of facing the challenging task? Do they experience more criticism than students who use approach styles of coping? It is important to note that a great deal of variability can exist among underachievers [64]. A qualitative follow-up study could be instrumental in learning the answers behind the questions raised and examine patterns among various types of underachievers.

8.3. Limitations and Future Directions

Though our work adds to the existing base of literature, our results cannot be generalized beyond the present sample, and additional research is needed to replicate the present study's findings in broader and more diverse populations. We acknowledge that our population does not mirror that of the nation or the gifted population at large. Our sample included primarily Caucasian students from middle-income families living in a suburban area of the southeastern United States. Gifted students of differing ethnicities, geographic regions, and socioeconomic status should be included in future studies in order to increase generalizability. Another limitation of the study is its reliance on high IQ and achievement scores for identification of giftedness; participating students in this study were identified as gifted according to this state's policy, which requires comprehensive assessments of cognition and academic achievement in addition to a measure of creativity or gifted characteristics. However, there is a body of research demonstrating that these traditional identification methods are not optimal for identifying gifted students from under-represented populations (e.g., poverty, minority, ELL students) [90–93], restricting these groups from cognitively appropriate opportunities found in gifted programs and services. In addition, our sample is not a random sample, but a sample of convenience; thus, the sample does not represent the larger population. Additionally, because we used a number of statistical tests, there is an increased likelihood for Type 1 error. Readers must cautiously interpret our results in light of such limiting factors.

As alluded to earlier, the field has not created a unanimous theory in terms of talent development or the conceptualization of giftedness. Subotnik and colleagues presented a comprehensive examination of the state of the field, lending focus to the factors that play a role in shaping gifted students' ability into performance [15]. However, Tannenbaum, Renzulli, Gagne, and Sternberg are among others who have proposed disparate conceptualizations of talent development [16–19]. If this research had been completed under the governance of a different theoretical framework or conceptualization, then the identification processes and supports may have looked different. Different students may have been identified, mentored, and supported towards talent development. However,

regardless of the adopted theory, it seems that the ultimate goal is developing premier levels of talent in gifted students, actualized as accomplishment. So, despite theoretical differences, leaders of the field should agree that inhibitory factors (e.g., perfectionism, avoidance coping, and underachievement) are important to address, as these may reduce the likelihood of personal talent actualization.

We asked teachers to nominate underachievers based on set criteria (a grade of a C in one or more classes or teacher-identified based on observed underachieving behaviors that warrant attention). The latter form can certainly be influenced by teacher bias which is a major limiting factor in operationally defining underachievement (though all teacher-nominated gifted underachievers in the present study also had a grade of a "C" in a class). Using a grade of a "C" is most consistent with how other studies have identified gifted underachievers (e.g., [64,83,84]). Furthermore, we acknowledge we may not have included all "true" underachievers in our analysis. Reis and McCoach reviewed the research in this area and explain that there are multiple types of underachievers [72]. Additionally, Moore, Ford, and Milner contend that definitions may not be useful for defining underachievement in all gifted students; school personnel must first recognize that a student is performing below expectations [94]. If the school personnel ascribes to a deficit orientation, it is possible that they may not first recognize the true academic potential of students, especially gifted students of color, which would prevent these students from being identified as underachievers. There were likely many gifted underachievers who were not participating in the gifted program because their underachieving behaviors keep them from being identified as gifted. These students were not captured in our sample. Future research should strive to include high-ability underachievers that may not be in a gifted program and also compare various *types* of underachievers across measures to perfectionism and coping. This delineation would likely provide more accurate information to teachers and others attempting to provide effective interventions to underachieving gifted students.

In light of our findings, future studies might include an examination of the motivational mindsets [42] and goal orientations of gifted underachievers and how they relate to perfectionism. Does an underachiever's belief about intelligence as fixed or malleable influence perfectionism and coping responses? Do performance vs. mastery goal orientations influence underachievement? Finally, our study is limited in that it relied solely on self-reported measures administered at one moment in time. Students may have been concerned with self-presentation or have marked responses that are socially desirable, masking their true beliefs about perfectionism and coping. Qualitative and longitudinal data would be especially telling in future studies. If a study could begin with younger, elementary-age gifted students and follow them throughout their school experience, we could learn much about the patterns of potential perfectionism, underachievement, and coping. These trends could show us the best times for intervention and prevention. We could learn about potential precipitating events and developmental factors, which could also assist with the timing of targeted interventions.

9. Conclusions

This study provides educators and advocates an initial glimpse into the links between perfectionism, types of coping, and underachievement. Findings reveal two implications for the field: (1) Multidimensional perfectionism theory is enhanced through understanding how specific dimensions of perfectionism are associated with coping orientations among gifted adolescents. Had we looked at combined dimensions through two dichotomous constructs (Positive Strivings and Evaluative Concerns), we would not see the significance in Personal Standards' association with avoidance internalizing behaviors nor would we see the positive relationship between Concern over Mistakes and problem-solving approach coping. This is significant because a student's high academic performance, high goals, and positive problem-focused coping may mask underlying critical self-evaluative tendencies and associated negative feelings. Our study suggests the importance of working with students to decrease the critical self-evaluations associated with attaining such high standards. Much of the literature recommends enhancing Positive Strivings [20], but those working with gifted students must be cautious in doing so if the student's self-worth is contingent on reaching

excessively high performance standards. Enhancing mastery/learning goals and growth mindsets (e.g., a belief in malleable intelligence) can help perfectionists view mistakes as cues to adjust strategies in the attainment of a goal. When one is concerned with the desire to learn and believes intelligence can be further developed, mistakes are no longer seen as a threat to one's self-worth and perceived competency, but are viewed as opportunities for readjustment in reaching mastery. Our findings offer ways to build resiliency in the face of setbacks by enhancing organizational skills as constructive strategies to meet set goals. (2) The study is the only study we know of that quantitatively examines how gifted underachievers differ from other students in perfectionism and coping. Underachievers in the present study did not necessarily display more aspects of maladaptive perfectionism (Evaluative Concerns); rather, underachievers actually lacked high standards and organization associated with Positive Strivings. Furthermore, it appears that underachievers in the present study either do not have or do not value approach coping tools to manage an academic stressor. Though these findings must be interpreted in light of the study's limitations, they emphasize the need to teach underachievers approach-oriented strategies such as problem-solving and seeking support while also enhancing personal standards (e.g., goals) and organization so that they may be equipped to face challenges with effective self-regulation. Overall, we must remember that the old adage "gifted students will be fine on their own" is anything but true. In order to attain high academic potential and achieve healthy standards of academic excellence, it is important to provide services in areas of organization, approach coping, and mastery-oriented goal-setting so that gifted students may soar without interruption.

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