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Goal Setting: Enhancing Academic Attitudes and Achievement
in High School Gifted Underachievers

A dissertation submitted in partial satisfaction of the
requirements for the degree Doctor of Education

by

Rhonda Czapla Sivaraman

2012

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ABSTRACT OF THE DISSERTATION

Goal Setting: Enhancing Academic Attitudes and Achievement in High School Gifted Underachievers

by

Rhonda Czapla Sivaraman

Doctor of Education

University of California, Los Angeles, 2012

Professor Sandra H. Graham, Co-Chair

Professor Diane Durkin, Co-Chair

The underachievement of gifted students is a well-documented problem in educational research. This study employed an experimental design to determine whether an existing personal goal setting intervention could successfully improve academic attitudes and achievement in a sample of 44 high school gifted underachievers, as well as determine if any patterns existed in students' goal writing exercises. The goal setting intervention included two after-school goal setting sessions for a duration of approximately three hours, whereby students individually reflected on and wrote about personal and academic goals. Students completed three measures of academic attitudes pre-intervention, one-day post-intervention, and three-months post-intervention: the School Attitude Assessment Survey – Revised, the Future Orientation Scale, and the Theory of

Intelligence Survey. Achievement data in the form of grade point average was additionally collected for the semester pre-intervention as well as the semester immediately following the intervention. ANOVA results indicated that treatment students experienced significantly higher academic self-perceptions on the School Attitude Assessment Survey and significantly higher gains in grade point averages over the control group. Examination of students' writing revealed that students cited time management as their largest impediment to improving their academic performance. Surprisingly, analysis of student writing indicated that participants in this sample identified themselves as underachievers, but not as gifted. Recommendations from the findings include implementing goal setting curriculum during the regular school day to allow students to monitor their goal progress under the guidance of a teacher or counselor over a longer duration to assist them in goal pursuit.

The dissertation of Rhonda Czapla Sivaraman is approved.

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2012

DEDICATION PAGE

I dedicate this work to my parents, Ronald and Rebecca Czapla. Your love and support throughout the years have motivated me to pursue excellence, and in truth, I've completed this undertaking for you. Thank you for everything. I love you both.

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VITA

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CHAPTER ONE

THE PROBLEM STATEMENT

Introduction

The failure of gifted students, particularly those who belong to low socioeconomic and minority populations, is receiving increased attention in both academic and popular literature (Reis & Renzulli, 2010; Renzulli & Park, 2000; Ford, 1994; Cloud, 2007). Although policymakers labor to ensure that no struggling child is left behind, research indicates that few programs guarantee that gifted students receive instruction tailored to meet their specific intellectual needs (Reis & Renzulli, 2010; Archambault, Westberg, Brown, Hallmark, Emmons, & Zhang, 1993; Renzulli & Park, 2000). Indeed, the gifted dropout rate has been estimated to be as high as 25% of the total dropout population (Robertson, 1991). This rate is often attributed to the lack of a stimulating, responsive school environment (Robertson, 1991; Rimm, 1997; Renzulli & Park, 2000).

Research on gifted students' lack of success (Renzulli & Park, 2002; Matthews, 2006; Reis & McCoach, 2000) suggests that a high school intervention might break the cycle of underachievement before students leave the school system altogether (Kavensky & Keighley, 2003; Rimm, 1997; Flint, 2002; Renzulli & Park, 2002). This study sought to modify and implement an existing personal goal setting intervention to enhance academic attitudes and achievement in gifted underachieving high school students in a large urban district. Because academic attitudes have been cited as major behavioral factors in underachievement (McCoach & Siegle, 2003; Morisano & Shore, 2010), those factors were targeted to translate into increased academic achievement for this subset of identified gifted students.

Background of Gifted Underachievement

Although giftedness has varying definitions, research identifies key characteristics of gifted individuals in diverse populations across multiple cultures (Reis & Renzulli, 2010). These characteristics include superior levels of memory, insight, problem solving, reasoning ability, communication skills, creativity, imagination, and motivation (Reis & Renzulli, 2010). Gifted students generally perform well above their age-level peers in academic studies; when these students exhibit a discrepancy between their measured potential and their actual performance, they have been termed “underachievers” in the relevant literature (Reis & McCoach, 2000; Baum, Renzulli, & Hebert, 1995; Marsh, 1991).

Multiple factors can contribute to underachievement in the gifted population as a whole. The literature groups these factors into the following categories: educational, familial/cultural, and behavioral/internal (Reis & McCoach, 2000; McCoach & Siegle, 2001; Baker, Bridger, & Evans, 1998). Underachievement may occur in gifted students when educational factors cause students to be bored with or feel disconnected from the curriculum (Kanevsky & Keighley, 2003; Robertson, 1991) or unsubstantially challenged in their required coursework (Reis & Renzulli, 2010). Teachers as early as elementary school report making only rare and irregular modifications to the standard curriculum to accommodate their gifted learners (Archambault et al., 1993). Although differentiated instruction (Kaplan, 2009; McCluskey, Baker, & McCluskey, 2005) has been proposed as a solution to reverse underachievement, it appears that many educators have difficulty in modifying instruction to meet the needs of the gifted population. This difficulty is only compounded by the ambivalent, and sometimes negative, attitudes teachers report in educating the gifted (McCoach & Siegle, 2007; Cramond & Martin, 1987).

Family and cultural factors also play a role in gifted underachievement. Parents report challenges in raising gifted children as their advanced reasoning abilities can complicate the parent-child relationship (Rimm, 1997). Nevertheless, high parental involvement has been found to correlate with higher student achievement for all ethnic groups (Keith & Benson, 1992; Keith & Lichtman, 1994). Supportive and nurturing behavior is correlated with the high-achieving subset of students, especially in low-income minority families (Herbert & Reis, 1999). Renzulli and Park (2000) found that almost half of the gifted dropout students in their study belonged to the lowest socioeconomic quartile and were disproportionately from Hispanic and Native American ethnic groups; furthermore, they had parents with who did not graduate from high school. Black students identified as gifted are also disproportionately underachieving as compared to White and Asian populations (Ford & Harris, 1994; Ford, 1992). Gifted Latinos face additional barriers because a minority language background may contribute to lower-than-expected achievement (Fernandez, Paulsen, & Hirano-Nakanishi, 1989). The literature is clear that gifted students from poverty and minority backgrounds have the greatest risk for becoming underachievers.

Finally, individual and behavioral characteristics have been found in the underachieving gifted population, which helps to differentiate them from gifted achieving students. Gifted underachievers display individual characteristics that correlate with their lower-than-expected performance, including low self-concept, pessimistic attitude, depression, anxiety, aggression, impulsivity, immaturity, fear of failure, and attribution of outcomes to external loci of control (Reis & McCoach, 2000). Students who are not presented with curriculum commiserate to their abilities may fail to associate being “smart” with working hard (Castro, 2008). Colangelo, Kerr, Christensen, and Maxey (1993) found that high school gifted underachievers were less involved

in extra-curricular activities, reported less desire to enter into professional studies, and requested less assistance in independent study and honors classes than their “achieving” gifted peers. Other research indicates that underachievers have poorer attendance patterns than achievers (Peterson & Colangelo, 1996), suggesting a passive resistance toward education.

In a later study of gifted high school students, McCoach and Siegle (2003) found that a lack of motivation and self-regulation combined with low goal-valuation could accurately predict whether a gifted student was underachieving. Gifted underachieving students did not value the goals set by the school; therefore, these students found little motivation to work toward the school-imposed goals. This supports previous research that found that underachievers often hold little or no value for academic achievement as defined by the school (Emerick, 1992). These findings relate to the present study, as no research has yet been conducted that attempts to enhance gifted underachievers’ academic attitudes and achievement through the setting personal goals.

Gifted Underachievement in a Local Context

The Urban Union School District is a large school district in the western United States and educates over half a million students. The Urban Union School District instructs a diverse student body, with the following ethnicities represented: 73.4% Latino/Hispanic, 0.4% American Indian or Alaskan Native, 3.9% Asian, 0.4% Pacific Islander, 2.2% Filipino, 10% African American, 8.8% White, 0.1% multi-racial, and 0.9% non-reported (CDE, 2011). The four-year derived dropout rate for students in the Urban Union School District was 34.4% for the 2008-2009 academic school year (CDE, 2011). Approximately 13% of all Urban Union high school students were identified as gifted in 2011.

Similar to many other districts, schools in the Urban Union School District do not consistently employ systematic academic and behavioral instruction and interventions to meet the needs of gifted and high-ability learners. New City High School, a school in the Urban Unified School District displays notable incidences of gifted underachievement, with approximately 36% of identified gifted students attaining a grade point average lower than 3.0, making them ineligible to attend a University of California. As the underachievement cycle appears to worsen in high school (Rimm, 1997), addressing the problem in high school is the last opportunity to stop the cycle of boredom, negative affect, and withdrawal (Kavensky & Keighley, 2003; Hughes & Rollins, 2009) that can develop among gifted and high-achieving students through secondary school, where dropping out may occur (Renzulli & Park, 2002).

Existing Interventions

The research on effective interventions for gifted underachievers is sparse (Reis & McCoach, 2000), and interventions that do exist present inconsistent results (Emerick, 1992). Furthermore, most interventions have been targeted at the elementary level (Reis & McCoach, 2000) where students remain in the same class with one teacher for the entire day. Attempted interventions include a counseling approach whereby school counselors worked with students to alleviate cognitive and emotional handicaps, fill educational gaps, and implement reward systems to increase achievement (Whitmore, 1980); others sought to create classrooms with smaller teacher-to-student ratios in a student-centered environment (Supplee, 1990; Whitmore, 1980). These interventions, however, were employed for elementary school students, and not for secondary school students where the underachievement pattern is most clearly pronounced (Rimm, 1997).

Two recent interventions attempted to reverse the gifted underachievement cycle in the urban secondary school population, measuring the effect of the intervention on students' motivation and academic achievement. The first intervention targeted underachieving Latino middle school students through a theater-arts enrichment program to engage students academically in school; no significant results, however, were found in increasing student achievement or motivation (Niederdeppe, 2009). The second intervention targeted high school students using a peer and mentoring network. Although no statistically significant gains were obtained for indicators of student achievement, students did make self-reported changes in motivation and self-regulation that support academic achievement, and recommendations for future research included goal setting activities for secondary gifted underachievers (Castro, 2008). Because lack of motivation and goal-valuation is predictive of underachievement (McCoach & Siegle, 2003), I suggest that implementing an intervention that allows students to see the relevancy of higher achievement might provide the impetus necessary for underachieving secondary school gifted students to reverse the underachievement pattern. This idea is also supported by current research, which proposes that personal goal setting has the potential to enhance gifted underachievers' academic performance (Morisano & Shore, 2010; Morisano, Hirsh, Peterson, Pihl, & Shore, 2010).

The Project

My project consisted of implementing a modified version of an existing personal goal setting intervention to increase academic attitudes and achievement for gifted underachieving high school students. I targeted behavioral factors because current research suggests that these indicators are most predictive of underachievement (McCoach & Siegle, 2003; Schunk, 2003).

This intervention consisted of a personal goal setting intervention that successfully impacted academic performance in underachieving undergraduate students (Morisano et al., 2010), but was modified for the developmental needs of high school students.

Students were recruited for this project because they were identified as gifted according to the Urban Union School District and concurrently underachieving in their academic performance, which was defined as having a cumulative grade point average of 3.0 or below. After students were successfully recruited for the study, they completed three pre-test instruments that measured their academic attitudes. Students were then randomly assigned to either a treatment or control group, where they received either the study's intervention or no intervention over the course of two sessions. Students once again took the three measures of academic attitudes one-day post-intervention. Finally, the three measures of academic attitudes were given again three months post-intervention. Pre- and post-semester academic data were also collected to determine if any differences existed between the two time points.

The research questions that guided my study were:

1. To what extent does a personal goal setting intervention impact academic attitudes in gifted underachieving high school students?
2. To what extent does a personal goal setting intervention impact actual academic achievement in gifted underachieving high school students?
3. What do students say are the benefits of features of the goal setting intervention, and does student belief in the value of the intervention relate to actual academic increase?
4. To what extent do students articulate clearly defined personal goals, and which, if any, patterns emerge in students' responses?

Site and Student Sample

New City High School, a pseudonym, was chosen for the intervention site because it had a high population of secondary underachieving gifted students. Thirty-six percent of the gifted students at New City High School were classified as “underachieving,” which for the purpose of this study was defined as having a grade point average at or below 3.0. The indicator of grade point average was chosen because having an average at or below 3.0 would jeopardize students’ ability to enroll in the University of California system. Because of the large gifted underachieving population, an intervention that enhanced students’ attitudes toward school was believed to be beneficial for these students to improve their attitudes toward schooling, as well as their academic achievement. The sample included 44 students in the 10th, 11th, and 12th grades who were randomly assigned to either a treatment or control group.

Research Design and Data Collection

This project employed a mixed-methods experimental design to determine whether a personal goal setting intervention positively impacts students’ academic attitudes as determined by three measures: the School Attitude Assessment Survey-Revise, the Future Orientation Scale, and the Theory of Intelligence Scale. These three survey instruments were given to all sample students pre-intervention, one-day post-intervention, and three-months post-intervention. Academic achievement data in the form of grades were collected at two time points: the pre-intervention semester and the post-intervention semester. Qualitative data collected included treatment students’ actual writing during the goal setting project, as well as both treatment and control students’ goal writing three-months post-intervention.

Public Engagement

After the results of the intervention were analyzed, I communicated the findings to the principal, assistant principal, and gifted coordinator at New City High School. From this meeting, the project's results were disclosed to the school-wide community to ensure that successful portions of the project are replicated with other students who might show a lack of motivation in the classroom setting.

I also shared the results of my study with the Urban Union School District's central office. Representatives from this office plan to communicate the results of this study with other schools that have a high proportion of underachievers in their gifted population. Additionally, results of this project will be disseminated to several local high schools who have agreed to adopt a goal setting curriculum in the advisory period to better guide students in setting and working toward their personal and academic goals.

CHAPTER TWO

A REVIEW OF THE LITERATURE

In this project, I implemented an existing intervention to enhance academic attitudes and achievement in gifted underachieving high school students. My study sought to improve academic attitudes and achievement through personal goal setting, a strategy that research suggests might benefit the gifted underachieving population (Morisano & Shore, 2010; McCoach & Siegle, 2003; Flint, 2002).

I begin my literature review with a background of gifted underachievement. I then examine the relationship between motivation and achievement, which suggests that an intervention aimed at increasing students' academic attitudes should enhance underachieving gifted students' academic performance. Next I turn to goal setting theory, a construct falling in the domain of social-cognitive psychology, that links explicit goal setting to increased achievement. Finally, existing interventions employing goal setting theory are scrutinized to inform the present study and situate my intervention in the context of previous research.

Gifted Underachievement

The problem of gifted underachievement has been well documented in both scholarly journals and popular media (McCoach & Siegle, 2003; Colangelo et al., 1993; Peterson & Colangelo, 1996; Cloud, 2007). Gifted students, it would seem, should naturally perform to their potential and certainly above their more “average” or lower-ability peers. Yet, research indicates a disconnect between what students are able to do and what they actually produce. This discrepancy between measured potential and actual performance is what the body of research terms underachievement (Reis & McCoach, 2000; Baum et al., 1995; Marsh, 1991; Whitmore,

1980). Although there is dispute regarding the valid measure of potential and the degree of underperformance required to label a student “underachieving” (Dowdall & Colangelo, 1982; Colangelo & Assouline, 2000), a combination of high scores on intelligence exams with low grades, poor attendance patterns, and/or low standardized test scores is most often employed (Reis & McCoach, 2000). Multiple factors can contribute to underachievement, which the literature groups into the following categories: educational, familial/cultural, and personal/individual (Reis & McCoach, 2000; Baker et al., 1998; McCoach & Siegle, 2001; Flint, 2002; Peters, Grager-Loidl, & Supplee, 2000).

Educational Factors in Underachievement

Underachievement may occur when gifted students are bored with or feel disconnected from the curriculum (Kanevsky & Keighley, 2003; Robertson, 1991), or are not substantially challenged in their daily coursework (Reis & Renzulli, 2010). One national study illustrated how this disengagement can begin as early as elementary school: surveying over 7,300 upper elementary school teachers, researchers found that teachers reported making only rare and irregular modifications to the standard curriculum to accommodate for their gifted learners (Archambault et al., 1993). Although differentiated instruction that seeks to add depth, complexity, and creativity to schoolwork (Kaplan, 2009; McCluskey et al., 2005; Tomlinson, 1999) has been proposed as a solution to break the underachievement-to-dropout cycle, it appears that many educators have difficulty in adapting the curriculum for the gifted learner. The lack of responsive instruction sets the stage for later underachievement and possible dropout behavior among this exceptional population.

Many instructional strategies have been proposed to ensure that gifted students are given appropriate instruction, but some studies suggest that the educational environment itself may not be welcoming to gifted students. When asked about their attitudes toward gifted education, some studies have found that almost half of the educators surveyed reported a negative attitude (Morris, 1987; McCoach & Siegle, 2007) and others have found that teachers preferred to teach average students than smart, nonathletic students (Cramond & Martin, 1987). While other studies have found both positive and neutral teacher attitudes toward gifted students and their unique educational needs (McCoach & Siegle, 2007; Gagne, 1983), gifted education is generally not perceived as a priority for most teachers, schools, and districts.

Recently, the push for standardization and accountability testing under No Child Left Behind has been implicated in the decline of instruction for gifted and high achieving students. In their most recent report, Xiang, Dahlin, Cronin, Theaker, and Durant (2011) found that approximately 40% of high achievers in the early grades had lost their level of high achievement just four years later. The researchers suggest that accountability tests encourage instruction to improve the lowest-achieving students and do not promote higher-level achievement in an already high-achieving group. Although this study could not imply causality due to its design, recent reports suggest that the current system of testing that aims to close the achievement gap negatively impacts gifted students' academic achievement (Xiang et al., 2011). The educational environment, then, may be ill-matched to the needs of the gifted learner.

Familial and Cultural Factors in Underachievement

Family structure, organization, and relationships have a well-defined role in the achievement patterns of in all students, including those identified as gifted. High parental

involvement correlates with higher student achievement in both for all ethnic groups (Keith & Benson, 1992), including Mexican Americans (Keith & Lichtman, 1992). In a study of low-income, high-achieving minority gifted studies, Hebert and Reis (1999) found that students reported their families as being supportive and nurturing them in a variety of ways. Rimm (1997) found, however, that there are many inherent challenges to parenting a gifted child. Children who are gifted often have advanced reasoning abilities and expanded vocabularies, which parents can mistake for maturity. Because these gifted children seem “special”, parents may confer too much attention on the young child, which creates an “attention-dependence” on the part of the child. When this “special” status is withdrawn at home or negated in school, children might experience attention withdrawal and act out in response (Rimm, 1988), which could arguably include behaviors associated with academic underachievement.

Achievement levels of gifted students from diverse cultural backgrounds also display notable patterns, although research in this area is sparse (Reis & McCoach, 2000). One longitudinal study in an urban high school found that almost 50% of ethnically diverse gifted students were classified as underachievers (Reis, Hebert, Diaz, Maxfield, & Ratley, 1995). In their research on identified gifted Black students, Ford, Grantham, and Whiting (2008) found that almost half of the student sample could be categorized as either “effort-related” or “academic” underachievers. A little over one third of these gifted Black students additionally displayed an “attitude-achievement paradox”, whereby they reported having good work habits, but did not spend a considerable amount of time in academic-related activities outside of school, including reading and writing. It appears, then, that these talented students, by virtue of being gifted, believe they are doing well in school, when in fact they are not.

Ford (1992, 1993) also found that some gifted Black students feel a stigma of “acting White”. These students reported that speaking standard English, getting good grades, and achieving in school creates a feeling of disconnect in their self identity. When students feel this disconnect and are accused of “acting White”, they may intentionally underachieve in the school setting. This finding is also supported by current research in educational psychology, which found that African American and Latino middle school boys admired low-achieving peers more than high-achieving peers (Taylor & Graham, 2007). It thus seems that as peer pressure increases for minority gifted students, the vulnerability for academic underachievement also increases.

Personal and Individual Factors in Underachievement

Many individual characteristics differentiate gifted underachievers from gifted high achievers. In their comprehensive review of the past three decades of research in gifted underachievement, Reis and McCoach (2000) identified several characteristics that frequently coexist with underachievement in the gifted including low self-concept, pessimistic attitude, depression, anxiety, aggression, impulsivity, immaturity, fear of failure, and attribution of outcomes to external loci of control. In fact, gifted underachieving students’ difficulty in attributing outcomes to effort has been emphasized in other research that indicated underachievers fail to make the connection between the outcome they receive and the effort they expend (Reis & McCoach, 2000). Underachieving students may learn in elementary school that they are smart without working hard, and when challenges present themselves in later schooling, they may be mentally unprepared to understand that hard work, and not just intelligence, determines their performance.

Gifted underachievers also display personal characteristics that correlate with their lower-than-expected performance. Colangelo, Kerr, Christensen, and Maxey (1993) found that high school gifted underachievers were less involved in extra-curricular activities, reported less desire to enter into professional studies, and requested less assistance in independent study and honors classes than their high-achieving gifted peers. Peterson and Colangelo's (1996) findings indicated significant differences in attendance patterns between gifted high-achievers and underachievers, with underachievers being both absent and tardy more frequently than achievers, suggesting a passive resistance toward education. Data indicated that the persistence of underachievement suggests systemic student behaviors or characteristics that contribute to the lower academic gains reported in this group, as opposed to short-term situational factors (Peterson & Colangelo).

In their research on gifted high school students, McCoach and Siegle (2003) established that a lack of motivation combined with the inability to value academic goals for high achievement could predict whether a gifted student was high achieving or underachieving with 81% accuracy. Although Renzulli and Park (2002) suggest a comprehensive plan to enhance motivation and prevent underachievement that includes offering advanced extracurricular activities, improving relations between students and teachers, establishing counseling services that help students through academic and personal problems, and developing close communication with parents to counteract underachievement, their recommendations are vague and empirical studies that examine whether these interventions are effective have not been conducted in the literature. A recent publication on gifted underachievement (Morisano & Shore, 2010), however, has urged a closer look at the motivational factors that play a role in

gifted underachievement and suggests personal goal setting as a method of increasing academic goal-directed behavior to reduce underachievement in the gifted population.

Gifted Dropouts: Extreme Underachievement

National high school dropout rates garner considerable attention. While the dropout problem has plagued our country, the National Center for Education Statistics (NCES) reports that there is a downward trend in the number of reported dropouts. When status dropouts, or the percentage of 16- to 24-year-olds who have not earned a diploma or equivalency degree, are considered, the status dropout rate for all students was estimated at 27.2% in 1960 and decreased to 8.0% in 2008 (National Center for Education Statistics, 2011). Considerable differences in dropout rates can be observed, however, among the population of students. When high school dropout incidences are analyzed, males are more likely to drop out than females (8.5% versus 7.5%), Hispanic and Black students (18.3% and 9.9%) drop out more frequently than White students (4.8%) and students from the lowest socioeconomic quartile are more than seven times more likely to drop out than students from the highest socioeconomic quartile (16.4% and 2.2%, respectively). Thus, patterns of gender, ethnicity, and socioeconomic status appear in current research and have manifested through the past 50 years of national data (NCES, 2011).

Although research exists for the conglomerate of high school dropouts, there has been significantly less research on gifted dropouts in particular (Renzulli & Park, 2000, 2002; Robertson, 1991). Some past studies assert that gifted underachievers, later dropouts, have characteristics such as home instability, lack of motivation, negative attitude toward schooling, poor social adjustment, and drug and alcohol involvement. Indeed, much attention in the past

focused upon how gifted underachievers and dropouts were “broken” merchandise that needed to be repaired (Schultz, 2002).

Some researchers adopted a different stance toward gifted dropouts, however, affirming that the educational system is mismatched to properly serve certain students in the gifted community. Robertson’s theoretical research (1991) asserted that some gifted students, by nature of their unique ways of thinking, may not be concerned with school rules and order and instead prefer to “march to their own drummer” (p. 64). These gifted students are often labeled underachievers and are viewed as problematic in the classroom. Instead of focusing upon the required curriculum that they find irrelevant, they begin to look for meaningful encounters outside of school, and if they indeed drop out, blame is placed upon them instead of the educational system that has failed to respond to their needs. In fact, Robertson states:

Gifted dropouts appear on a self-actualizing quest; the wanderlust is a means to an end that may not be fully understood, but is an affective and a cognitive component of identity development as they strive for their niche in the world. (p. 67)

Gifted underachievers may not, then, place great importance on their schoolwork that they feel are incongruent with their interests and goals. This low goal valuation may induce withdrawal from schooling and general and lead to dropping out completely.

While Robertson’s explanation of why some gifted students choose to drop out may be relevant today with such a large focus on standardized curriculum and tests, there are justifiably more reasons that factor into a gifted student’s ultimate decision to drop out of school. Renzulli and Park (2000, 2002) conducted a two-part study that analyzed the issue of gifted dropouts and found several notable trends. Their research used data previously collected by the National Education Longitudinal Study of 1988 (NELS:88) that tracked a nationwide sample of 334 identified gifted students in public and private high schools across the country.

The first part of their study explored the reasons gifted students gave for dropping out and investigated parental responses to their children's dropout behavior. Both males and females reported the most salient reason for dropping out was due to disliking school or failing academic classes. Parents of gifted dropouts reported being concerned with their child's lack of progress, but not intervening when their child dropped out of school. Approximately 50% of gifted dropout students in the study were in the lowest socioeconomic quartile, while less than 4% belonged to the highest quartile, indicating that socioeconomic status could predict the frequency of gifted dropouts among categories. The data additionally revealed that Hispanic and Native American gifted students were more likely to drop out of school than their White or Asian counterparts, which corresponds to cumulative dropout statistics. When evaluated in terms of parental educational levels, a statistically significant trend revealed that gifted dropouts' parents were more likely to be high school dropouts and non-college graduates than the parents of those gifted students who completed high school (Renzulli & Park, 2000).

Following this investigation, Renzulli and Park (2002) conducted a secondary investigation that provides more nuanced data for the same sample of gifted dropouts. They found that gifted dropouts used drugs more frequently than their graduating gifted peers and had very little parental interaction, with a full 40% reporting talking to their parents fewer than once a week or not at all. Both parts of this study also affirmed that certain characteristics, namely socioeconomic status, ethnicity, and parental educational levels were correlated with the gifted students' dropout rates. These nationally representative data paint a picture of a "typical" gifted dropout: a minority child from a lower socioeconomic status stratum with less-educated parents, less access to educational resources, and living with less knowledgeable or motivated families to buttress their educational effort.

Existing Interventions to Reverse Underachievement in Gifted Students

Although research has explored the sources of underachievement in gifted students, research on effective interventions for gifted underachievers is limited (Reis & McCoach, 2000). Studies that do exist on the effectiveness of interventions targeted at gifted underachievers are inconclusive and at best demonstrate short-term success (Baum et al., 1995; Emerick, 1992, 1988). The research places interventions targeting gifted underachievement into one of two categories: instructional interventions and counseling interventions (Whitmore, 1980; Dowdall & Colangelo, 1982; Reis & McCoach, 2000).

Instructional Interventions

Interventions targeting gifted underachievers frequently target instructional aspects of the schooling experience. Because research suggests that many gifted and high ability learners remain academically unchallenged in the classroom (Archambault et al., 1993; Reis & Renzulli, 2004; Reis & Renzulli, 2010), interventions often seek to add acceleration or enrichment to differentiate the typical school curriculum. These interventions can occur either during or outside of normal school hours.

There are two general kinds of acceleration: content acceleration and grade acceleration (Colangelo, Assouline, & Gross, 2004). One content-based method of accelerating instruction for gifted students is through the use of curriculum compacting. Curriculum compacting (Reis, Burns, & Renzulli, 1992) is an instructional approach that has been used to reorganize educational activities for students who demonstrate competency in skills prior to instruction. If teachers effectively compact instruction, they can eliminate up to 50% of direct instruction and practice for students who have high levels of understanding of grade-level concepts and

substitute more advanced learning activities during that time. One quasi-experimental study measured the impact of curricular compacting on student achievement in a national sample of 336 gifted students in second through sixth grade and found that no significant differences existed between students that received compacting and those that took part in typical curriculum activities (Reis, Westberg, Kulikowich, & Purcell, 1998), suggesting that compacting alone may not be capable of increasing the academic performance of underachievers.

A common form of grade-based acceleration is grade acceleration, also known as grade skipping (Peters et al., 2000). Grade skipping can occur through early entrance into kindergarten, moving past an entire grade level (e.g., instead of starting third grade with age-level peers, the student would move to fifth grade), or early entrance into college (Colangelo et al., 2004). Grade-accelerated gifted students commonly surpass their older peers academically, and both grade-skipped and grade-accelerated students demonstrate average levels of socio-emotional adjustment (Colangelo et al., 2010; Colangelo et al., 2004). Furthermore, parents of gifted students have reported that the decision to skip grades was successful and sometimes reported regretting that an earlier “skip” had not been accepted (Rimm & Lovance, 1992). Although no evidence exists that grade skipping harms gifted students’ social-emotional well being, many barriers at the district and state level impede educators from accelerating students in a grade-based manner (Colangelo et al., 2010), making grade skipping a rarely-employed intervention.

A second type of instructional intervention involves enrichment, which can be used to differentiate for students based on abilities or preferences. Multiple models of enrichment interventions have been attempted to varying degrees of success. One intervention, the Schoolwide Enrichment Model (SEM) (Renzulli, 1988), has demonstrated certain academic

gains in identified gifted students, and is one of the most researched models for gifted enrichment. There are three goals for the SEM: 1) to develop talent in all students; 2) provide advanced-level enrichment opportunities for all students; and 3) using student response to guide follow-up advanced learning opportunities to students identified with gifts and talents. To accomplish these goals, educators assemble Total Talent Portfolios, compact the curriculum, and provide enrichment (Reis & Renzulli, 2004).

In the Schoolwide Enrichment Model, students identified as having superior achievement are assessed for interests and learning styles. The curriculum is then compacted and students receive one of three tiers of enrichment experience. Tier I enrichment consists of exploratory experiences outside of the typical curriculum, including field trips, meetings with guest speakers, and interest centers. Tier II enrichment includes instruction on strategies and use of materials to increase research, communication, and processing skills. Tier III, generally reserved for the most advanced students, involves investigative activities that require the student to take on the role of a practitioner in the field. Students working in this tier are encouraged to think, feel, and inquire like a professional (Reis & Renzulli, 2004; VanTassel-Baska & Brown, 2007). Research on this model has shown promise to increase reading fluency and reading attitude in elementary-aged students (Reis, McCoach, Coyne, Schreiber, Eckert, & Gubbins, 2007) and shows promise for minority gifted underachieving populations as well (Ford, 1999). This enrichment model, however, requires specialized training and does not currently align with state and national standards. The intervention's cost, complexity, and lack of alignment with both state and federal accountability systems seems to preclude its widespread use in the current climate of budget reductions and standardization.

A recent enrichment model that shows promise for minority gifted underachievers is Project EXCITE (Lee, Olszewski-Kubilius, & Peternel, 2009). Created at Northwestern University, this program seeks to enhance mathematics and science achievement and lower the achievement gap that persists even in high-ability populations. Through after school and weekend workshops, students build academic capacity through exploratory activities that supplements, and not supplants, the science curriculum offered at the local school. A qualitative study involving 14 students and their parents demonstrated that students felt that the program expanded their positive social network, enhanced social support for high achievement, and inspired students to academically compete with other gifted peers. Most importantly, students reported that the program motivated them to persist in advanced academic coursework (Lee et al., 2009). These findings are encouraging in that the model seems to affectively support academic achievement for minority gifted students, but it is important to note that the program is time-intensive and costly to implement. Additionally, the program was created and administered by a prominent research university, which makes widespread use of such an intervention unlikely for most schools that seek to enhance the academic performance of their gifted students during the regular course of the school day.

Counseling Interventions

Educating underachieving gifted students has focused primarily on students' academic needs. Counseling needs, while recognized, have only recently been emphasized (Wood, 2010; Colangelo & Assouline, 2000). Several different types of counseling interventions have been implemented to enhance the social and emotional well being of gifted underachievers. These interventions range from affective curricula delivered by teachers as part of a comprehensive

educational program for the gifted to therapy-like interventions involving individual, group, or family counseling (Reis & Renzulli, 2004). Isolated counseling techniques include reading about gifted individuals (Hebert, 2000) or watching movies about gifted individuals' lives (Milne & Reis, 2000). Classroom preventative strategies include providing affective curricula in the classroom that develops desired character traits, modeling appropriate behaviors and values, and holding students to high expectations (Reis & Renzulli, 2004).

Whitmore (1980) identified three categories of strategies to be implemented in the classroom that can enhance gifted underachievers' self-perceptions and build their self-esteem: supportive, intrinsic, and remedial. Supportive strategies consist of enhancing the school environment, improving and increasing the frequency of positive peer interaction, and teacher behaviors such as reflective listening that can convey acceptance and affirmation to the gifted learner. Intrinsic strategies are instructionally based and are designed to provide motivation and the feeling of self-control in the bright underachiever. Examples of these strategies include independent learning, interest-based projects, and providing opportunities for creative expression, which are similar components included in the Schoolwide Enrichment Model (Renzulli, 1988). Remedial strategies are included to improve students' academic performance and enhance motivation toward difficult learning situations. As the underachiever begins to achieve in the remediated subject, the author suggests that the student's self-concept will improve and behaviors associated with underachievement should then decrease (Whitmore, 1980).

Counseling interventions that occur outside of the classroom can be structured through either a remedial or developmental approach (Colangelo & Assouline, 2000). Remedial approaches assume a crisis-type response, whereby the counselor attempts to help solve the

underachievement problem or minimizes the difficulty the student is facing. This could include a psychodynamic approach, which has been successful in reversing underachievement through therapist-led mentoring, coaching, and advising of individual students (Grobman, 2009). A developmental approach emphasizes proactive planning to prevent underachievement, which includes establishing a school environment that is responsive to the academic, social, and emotional needs of gifted learners (Colangelo & Assouline, 2000). This approach can be realized by creating a mentorship network at the school site, which has been attempted in previous interventions (Castro, 2008). This type of counseling intervention has also been explored recently in comparative case-study research (Hebert & Olenchak, 2000), which indicates positive adult support is effective in helping gifted underachievers improve motivation and self-regulatory academic efforts. Overall, counseling gifted students has begun to show promise, but little empirical research has yet been conducted to validate its effectiveness in the underachieving population.

Academic Attitudes and Achievement

Motivation

Motivation affects the level of overall achievement obtained over time for any undertaking, which depends not only on the level of achievement, but also on the quantity of time spent laboring at that endeavor (Atkinson, 1974; Lens & Rand, 2000). Individuals who are motivated to complete a task will attempt to spend more time on that task, which generally results in an individual's growth in capacity in that area (Gottfried & Gottfried, 2004). A positive association, then, should be demonstrated between motivation and ability (Garn, Matthews, & Jolly, 2010; Lens & Rand, 2000). As gifted students' level of ability tends to

surpass their age-related peers, they are often incorrectly attributed with high motivation (Gottfried, Gottfried, Cook, & Morris, 2005; Garn et al., 2005).

In this regard, gifted underachievers are a paradox. Students display a growing incongruity between their potential, demonstrated by intellectual tests or observed competence, and their lower-than-expected levels of achievement (Butler-Por, 1993). Underachievement for gifted students might include achievement scores located in the middle or even highest of their grade-level peers; this can still be considered underachievement, as their abilities should predict superior results (Lens & Rand, 2000). Atkinson (1974) proposed that one reason gifted students might fall into a cycle of underachievement might be motivational in nature. Although students expressed their true capacity when they were identified as gifted, their motivation toward the school experience gradually diminished. These gifted underachievers would then perform only as well as average, or even below-average, students with their intellectual capacity eventually reaching a plateau. In this framework, individuals might be viewed as actually losing their giftedness.

The literature remains inconclusive as to whether motivation is part of the definition of giftedness, or rather a construct that serves to moderate gifted behavior (Phillips & Lindsay, 2006; Gottfried & Gottfried, 2004). For example, Renzulli (1986) characterizes giftedness as the intersection of high ability, creativity and task commitment, which other researchers have labeled as synonymous with motivation (Ruban & Reis, 2006; Lens & Rand, 2000). Conversely, other research has defined a construct known as gifted motivation (Gottfried & Gottfried, 2004), which applies to “those individuals who are superior in their strivings and determination pertaining to an endeavor” (p. 122). Irrespective of whether motivation is included as a component of

giftedness or defined as a separate construct, the body of research indicates that non-cognitive factors such as motivation are essential for exceptional levels of performance.

Self-Regulation

“Disentangling the concepts of motivation and self-regulation has proven challenging” for researchers (McCoach & Siegle, 2003, p. 418). Recent research, however, has posited that self-regulatory behaviors are a major factor in understanding student achievement. Self-regulatory learning has been defined as “an active, constructive process whereby learners set goals for their learning and attempt to monitor, regulate, and control their cognition, motivation, and behavior” (Pintrich, 2000, p. 453) toward those goals. Self-regulation includes the manner in which individuals are behaviorally, metacognitively, and motivationally dynamic participants in their own education (Zimmerman, 1994). Examples of self-regulation in the academic context include putting effort into schoolwork, completing schoolwork regularly, spending substantial time on schoolwork, and generally working hard at school (McCoach & Siegle, 2003).

Self-regulatory learning includes the utilization of four components: cognitive strategies, metacognitive strategies, self-management, and effort control (Pintrich & De Groot, 1990). It is important to note, however, that knowledge alone of strategies and self-management techniques is generally not sufficient to result in high achievement; students must not only understand, but also be motivated to use these self-regulatory strategies (Pintrich & De Groot). Former studies have demonstrated that the combined factors of motivation and self-regulation were one of the most accurate predictors of educational performance. In an empirical study, motivation combined with self-regulation explained 19% of the discrepancy in students’ grade point average (McCoach & Siegle, 2001; McCoach & Siegle, 2003).

Academic Self-Perception

Academic self-perception, also known as academic self-concept, expresses self-worth that is related to a person's perceived academic competencies (Byrne, 1996; McCoach & Siegle, 2003). The level of academic self-concept has been linked to academic performance, with almost 30% of the variance in achievement attributed to this factor (Lyon, 1993). Academic self-concept is statistically related to academic achievement, particularly to grades, but causal connections between these two factors have been difficult to establish (Marsh & Martin, 2011).

Research suggests that low academic self-perceptions are a trait of underachievers (Supplee, 1990; Dowdall & Colangelo, 1982). Because academic beliefs and perceptions are based in one's past achievement (Bong & Skaavlik, 2003), a positive feedback loop between poor achievement and negative academic self-concept can amplify, leaving the underachiever with poor beliefs about his or her ability to perform well academically. Unfortunately, these negative academic self-perceptions can play a major role in students' further academic growth and development (Markus & Nurius, 1986; Bandura, 1997). Goal setting has been identified as a key component of motivation and learning (Schunk, 2003). Examining the ability of a goal setting intervention to impact the attitude of academic self-perception could help interrupt the positive feedback loop and possibly give students more confidence about their academic abilities, thus inspiring them to take on more challenges and exhibit more persistence (Bandura, 1986) in the school setting.

Goal Valuation

High motivation to excel in a school subject in which the child has gifted ability is natural...whenever a gifted child confronts a learning opportunity that promises to be intrinsically rewarding because the content and process are related to the student's special

interests, career goals, and learning style, the natural response is one of high motivation to participate [in that academic work]. (Whitmore, 1986, p. 67)

The way students value their academic achievement is a critical factor in their educational self-regulation. If students esteem their school's goals, they should be more apt to academically participate in and direct more energy toward schoolwork, thus obtaining higher academic achievement (Pintrich & De Groot, 1990). Goal valuation in the academic context, then, includes goals and beliefs about the significance and appeal of the school task at hand (Pintrich & De Groot, 1990; McCoach & Siegle, 2003). Students could indicate high goal valuation in the school context by indicating a desire to get high marks in school, by reporting that it is important for them to do well in school, and stating that excelling in school is imperative for their future career aspirations (McCoach & Siegle, 2003).

Goal valuation appears to be correlated with motivation and self-regulatory behaviors. A recent study by McCoach and Siegle (2003) not only found that goal valuation was highly correlated with motivation and self-regulatory behaviors in gifted students, but that these factors were able to correctly categorize gifted students as high achievers or underachievers with over 81% accuracy. This led them to posit that "goal valuation is a precursor to motivation and self-regulation" (p. 151). They further suggested that "when students value academic goals, they become motivated to achieve scholastically. This motivation [then] promotes the development of self-regulation skills to achieve their academic goals" (McCoach & Siegle, 2003). In contrast, they argued that when students do not adopt academic goals, they are less likely to put forth the effort required to obtain high achievement marks, thus abandoning effort in self-regulatory behaviors in the academic sphere (McCoach & Siegle, 2003).

Future Orientation

Future orientation, also referred to as future time perspective, is related to the construct of self-regulated learning (Bembenutty & Karabenick, 2004). Future orientation, as defined by Honora (2002), is built upon the belief that “individuals’ hopes for and expectations of the future influence present behavior” (p. 302). An individual who possesses a long future orientation is understood to be able to visualize their life further ahead and consequently be able “to include more distant future happenings in his/her plans” than a person with a shorter future time orientation (Lens & Rand, 2000, p. 200).

Research has indeed indicated a relationship between future time perspective and achievement (Gjesme, 1979; Honora, 2002; Hortsmanshof & Zimitat, 2007). In one study on the effect of future time extension on academic achievement, results indicated that higher-achieving African-American students had greater future time extension than lower achieving students (Honora, 2002). Furthermore, Hortsmanshof and Zimitat (2007) argued that “future-oriented students are more intrinsically motivated and, thus, more likely to employ deep approaches to their studies” (p. 706). When overall academic achievement is viewed as a valuable investment, and when the current task is considered to be relevant in attaining that goal, students have demonstrated a higher likelihood of persisting in their educational endeavors (Frymier & Shulman, 1995).

Adolescents, in general, are deemed having a lesser future orientation than adults (Steinberg, Graham, O’Brien, Woolard, Cauffman, & Banich, 2009). It has been argued, however, that gifted students, even at a younger age, should be able to foresee a more distant future than their non-gifted counterparts due to their higher levels cognitive development (Morisano & Shore, 2010; Lens & Rand, 2000). Strengthening the future orientation of

underachieving gifted students through a goal setting intervention, then, should enhance students' ability to determine the value of their current school-related behaviors and ultimately enhance their academic motivation, which should lead to greater self-regulatory dispositions.

Theory of Intelligence

The manner in which an individual thinks about intelligence, or their overall belief system about intelligence, is considered their theory of intelligence (Murphy & Dweck, 2009; Dweck, 1996). There are two lay theories of intelligence, according to Dweck and Leggett (1988): an entity theory of intelligence, which states that intelligence is fixed and cannot be altered much by learning and effort, and an incremental theory of intelligence, which subscribes to the notion that intelligence is not fixed and can expand based upon learning and effort. Although most people find both theories of intelligence to be plausible, they generally subscribe to one theory more so than the other (Murphy & Dweck, 2009).

The theory of intelligence espoused by an individual is linked to the types of goals individuals set. An individual who endorses an entity theory sets performance goals with a fixed target to prove their ability, and if they struggle in meeting their goal, they put forth less effort and begin to question their self-concept (Hong, Chiu, Dweck, Lin, & Wan, 1999). Individuals who espouse an incremental theory of intelligence, on the other hand, tend to create learning goals to develop their talents in a certain area. If incrementalists struggle in meeting their goal, they will persevere and attempt other approaches to meet their goal (Hong et al., 1999; Murphy & Dweck, 2009). Research has indeed found that espousing an incremental theory of intelligence is associated with higher motivation and achievement in adolescent students (Blackwell, Trzesniewski, & Dweck, 2007). Although this lay theory of intelligence has not

been explicitly studied in gifted students, examining students' overall intelligence orientation could shed light on how students view their intelligence, and whether they believe their efforts can help them achieve higher academic performance.

Goal Setting Theory

Goal setting theory stems from the study of motivation and falls within the domain of social-cognitive theory (Locke & Latham, 2002; Bandura & Cervone, 1983, 1986). The basic premise of this theory posits that “conscious human behavior is purposeful [and] is regulated by the individual’s goals” (Latham & Locke, 1991, p. 212). Goal setting theory is supported by over 1,000 empirical studies involving more than 40,000 individuals worldwide, which have found “that specific high goals are effective in significantly increasing an individual’s performance” in a variety of tasks (Latham & Locke, 2006, p. 332) in durations varying from one minute to 25 years (Latham & Locke, 2007; Howard & Bray, 1988; Latham & Baldes, 1975). The theory “focuses on the question of why some people perform better on work tasks than others”, and argues that if two individuals “are equal in ability and knowledge, then the cause must be motivational” in nature (Latham & Locke, 1991, p. 213).

Setting goals is effective for a variety of reasons. Because setting a goal creates an awareness of a discrepancy between a current and a desired state, individuals are motivated to increase their self-regulatory efforts or change their strategies to meet their set goal (Latham & Locke, 2006; Latham & Locke, 1991) due to cognitive dissonance. Goal setting also relieves boredom and provides individuals with a sense of purpose, increasing their concentration on goal-relevant tasks. Most importantly, setting and attaining goals gives individuals a feeling of accomplishment. As accomplishment enhances a person’s sense of personal effectiveness, it

generally produces higher self-concept and the setting of even higher goals to pursue (Latham & Locke, 2006). Thus, setting and attaining goals appears to create and strengthen a positive feedback loop between goal-directed action, accomplishment, and feelings of personal effectiveness, which should lead to higher academic self-concept.

Setting and pursuing goals can affect action through four methods (Locke & Latham, 2002). First, setting goals serves a guiding purpose by cognitively and behaviorally directing “attention and effort toward goal-relevant activities and away from goal-irrelevant activities” (p. 706). Second, goals serve a stimulating function, with difficult but attainable goals leading to more exertion than easier goals. Third, setting and working toward goals influences persistence, with more difficult goals extending effort. Fourth, “goals affect action indirectly by leading to the arousal, discovery, and/or use of task-relevant knowledge and strategies” (Locke & Latham, 2002, p. 707). The likelihood of attaining a set goal, however, is moderated by the commitment an individual has to that goal (Latham & Locke, 2006), as well as the ability to meet the goal, feedback in relation to goal pursuit, the complexity of the goal-related task, and situational factors that contextualize how the goal is to be attained (Latham & Locke, 2007). In general, “considerable evidence indicates that specific, proximal, and optimally challenging goals are the most likely to yield success, particularly when people have strong self-efficacy beliefs and dispositions” (Koestner, Lekes, Powers, & Chicoine, 2002, p. 231).

To be effective, goals should include several key characteristics. Locke and Latham (2002) identified factors of effective goals: specific goals that can be measured as opposed to more general goals that are difficult to assess progress; attainable goals that are challenging but reasonable to pursue; goals that are concordant with the individual’s desires; and proximal goals that are situated in a reasonably short timeframe. Zimmerman (2008) additionally stipulated that

students' goals should show congruence between the individual's goals and other's goals to raise commitment in goal pursuit. A common heuristic employed for appropriate goal setting is SMART: specific, measurable, attainable/appropriate, rationalized/reasonable, and time-bound. This acronym has been employed in both educational and organizational settings to ensure essential characteristics are in place when setting and elaborating on goals (Day & Tosey, 2011; Fielding, 1999).

Benefits of Goal Setting

Previous research has demonstrated that setting and working toward goals confers both physical and mental benefits to individuals across varying ages and contexts. In their review of the literature on goal setting, Sheldon, Kasser, Smith, and Share (2002) noted that when personal goals align with an individual's beliefs and reflect a desirable possible future, the individual's overall well being was enhanced (Sheldon et al., 2002; Emmons, 1988). To encourage personal growth and overall life satisfaction, Sheldon et al. (2002) thus designed an experimental personal goal-training intervention that involved a 60-minute group project and a brief, individual counseling session for college students. Students in the treatment group who made progress in obtaining their stated personal goals during the intervention demonstrated increased vitality, emotional balance, and self-actualization than students in the control group. The authors hypothesized that this personal growths were attributed to positive changes in students' self-concept, whereby goal pursuit could lead to elevated happiness and overall satisfaction (Sheldon et al.). These findings thus support the use of goal setting to enhance positive affect and psychological well being in individuals.

Indeed, writing about possible futures in the absence of explicit goal setting has been associated with increased psychological benefits. Morisano and Shore (2010) note that in one study by King (2001), participants with baseline similarities in both physical and mental health in a quasi-experimental study were asked to write about either their best possible selves or their plans for the day for approximately 20 minutes during four consecutive days. Treatment participants who were asked to write about their best possible selves scored significantly higher than control participants who wrote about their day in a self-measurement of subjective well-being. Additionally, treatment participants who wrote about their ideal selves consulted with medical personnel significantly less frequently than control subjects. Simply thinking and writing about an ideal future self, then, was correlated to higher overall health than planning mundane activities and was related to feeling less upset, more happy, and being sick less often (King, 2001; Morisano & Shore, 2010).

Enhanced psychological affect has also been noted in studies examining the effects of goal setting and pursuit. In one study on the effect of weekend goal setting on university students (Koestner et al., 2002), the authors found that students who set goals that were self-concordant (i.e., goals reflected personal interests and values instead of representing other people's wishes) made more goal progress over the duration of the weekend than goals that were extrinsically motivated. Participants who set self-concordant goals additionally reported increased positive affect as the weekend progressed. This heightened affect was significant, as students generally reported declining affect as the weekend progressed when they did not create or make progress toward goals (Koestner et al.). This study confirmed previous research that found that creating and working toward self-concordant goals were positively correlated with progress toward a goal (Sheldon & Elliot, 1999; Sheldon & Houser-Marko, 2001).

Goal progress and attainment can additionally result in greater well being in that it encourages need-satisfying experiences related to feeling capable and self-determined (Sheldon & Elliot, 1999). Merely setting goals appears to enhance general well being, even when goal attainment is not actualized. The perception of making progress toward a goal has also been shown to enhance feelings of well being in research studies (Brunstein, 1993; Emmons, 1986). Indeed, simply the existence of self-identified goals was similarly associated with positive affect as actually attaining the goals themselves (Emmons, 1986). One caveat to this premise does exist, however. When goals are not self-concordant or conflict with other personal goals, however, decreased psychological and physical well being might occur (Emmons & King, 1988). The body of research thus confirms that setting personal, self-important goals can boost positive affect and general feelings of self-efficacy.

Goal Setting and Academic Achievement

Although research in goal setting theory has been undertaken primarily in the domain of industrial-organizational psychology (Locke & Latham, 2002), it has also played a role in learning research (Schunk, 2003). One recent empirical study employing an intervention for undergraduate underachievers (Morisano et al., 2010) demonstrated that personal goal setting, which required underachieving undergraduate students to create, write, and reflect upon their personal goals, was successful in increasing both the grade point average and academic persistence of the participants. Students in the intervention group completed a two-and-one-half-hour online personal goal-writing exercise that was derived from goal theory literature and included multiple successful components of a goal setting experience.

The intervention involved an eight-step process that required students to recognize ideals, identify broad goals, break larger goals into sub-goals, and reflect upon goal commitment and feasibility. Step one asked students to write for specified time periods about specific aspects of their ideal futures, such as things they would like to learn more about, qualities they admired in others, and habits they would like to improve. This step was included because it allowed students to fantasize about desirable futures, which is an important motivator in goal pursuit (Sheldon et al., 2002; King, 2001; Oettingen, Pak, & Schnetter, 2001). Step two required students to formulate five to eight goals that could be pursued to reach their ideal future that they wrote about in the previous step. In step three, students ranked their identified goals in order of importance while also assessing the attainability of each goal in a specific time frame; this was important, as unattainable goals are apt to be less motivating than attainable goals (Locke & Latham, 2002; Bandura, 1977; Brunstein, 1993). Step four prompted students to write about the impact that pursuing their goal would have on various aspects of their lives. Steps five, six, and seven asked students to detail their plans in achieving their goals and create an implementation plan for goal attainment, which has been shown to bolster goal progress (Koestner et al., 2002). Finally, step eight compelled students to indicate their commitment to each of their goals, as commitment is related to goal success (Koestner et al., 2002). Students in the control group participated in internet-based assignments that did not involve goal setting and were also emailed copies of their responses for reflection after they were finished.

Student grade point averages and credit hour loads were measured pre- and post-intervention in a four-month interval. All students in the treatment and control groups also completed a post-intervention concluding questionnaire at the close of the study. Although both groups had nearly identical grade point averages before the intervention was measured, only the

treatment group's grade point average significantly improved over the course of the research, confirming the researchers' initial hypothesis. Similarly, all students in the treatment group maintained nine credit hours and above post-intervention, while 20% of students in the control group enrolled in less than nine credits, with several dropping out of college. On the measure of affect, only treatment group participants indicated significantly decreased negative affect, which additionally associated with grade improvement throughout the study.

One limitation of this study involved the selection of participants. Students campus-wide were recruited for participation and were included in this study if they nominated themselves as struggling academically concurrent with having a self-reported grade point average below 3.0. This is a possible threat to generalizability because students with low grade point averages that did not self-identify as academically struggling were thus excluded from the study. Furthermore, students who identified themselves as struggling might have been more inclined to pursue and reach goals than students who did not identify themselves as having academic issues. Despite these limitations, the success of this one-time, low-cost intervention demonstrated that personal goal setting, even when completed as an undirected, single-session event, could significantly improve academic achievement and persistence in a group of underachieving students. These results are promising, and guide future interventions to employ goal setting as an integral piece of interventions seeking to reach academically underachieving students.

Goal Setting in the Gifted

The dearth of literature examining the use of goal setting in the gifted population has been cited in research (Morisano & Shore, 2010; Shore, Cornell, Robinson, & Ward, 1991), and is notably sparse for gifted underachievers. The research that does exist has indicated that goal

setting might be beneficial for gifted underachievers. This indication, however, tends to be implicit and goal setting that is recommended has focused on the academic, rather than personal, domain (McCoach & Siegle, 2003; Whitmore, 1980; Peters, Grager-Loidl, & Supplee, 2000; Emerick, 1992).

Gifted individuals, in general, might benefit from goal setting activities. One study in elderly gifted adults first identified by Terman found that having and making progress toward life goals both directly and indirectly contributed to both the physical and psychological well being among participants (Holahan, 1988). Holahan and Chapman (2002) later found that “purposiveness” and proactive goals at the age of 40 predicted life happiness and satisfaction in relationships, personal growth, and overall achievement at age 80 in their sample of 242 gifted elderly adults. Another study that examined the career and family goals of gifted adults found that social and family supports aided in goal attainment, which was correlated to higher perceived career and family efficacy (Perrone, Civiletto, Webb, & Fitch, 2004).

Although personal goal setting has been primarily studied in adults, research has demonstrated that gifted individuals’ heightened cognitive and metacognitive capabilities allow the gifted to benefit from this activity at an earlier age than nongifted individuals (Morisano & Shore, 2010; Shore, 2000). This suggests that goal setting might be effective in reversing academic underperformance in gifted students. In her qualitative study involving gifted underachieving adolescents, Emerick (1992) found that academic achievement held little or no meaning for the participants in her study. The participants, however, suggested that learning how to develop goals that were both academic and personally motivating might help to reverse their underachievement. Furthermore, students in this study reported that making academic achievement a personal matter, in lieu of a way to only please others, would help them to reverse

their underachievement pattern. Castro (2008) also indicated that goal setting was a best practice in a mentoring intervention conducted with secondary Latino gifted underachievers. Although the intervention had limited success due to time constraints, he posited that students setting goals for themselves and their learning might enhance their academic achievement.

Personal goal setting has recently been an explicit recommendation for research on gifted underachievement. One empirical study that sought to differentiate gifted achievers from gifted underachievers by their personal characteristics found that gifted students were significantly lower on motivation, self-regulation, and goal-valuation than achieving gifted students (McCoach & Siegle, 2003). The authors suggested the creation and implementation of an intervention that includes goal setting and future planning activities to increase the personal affect of underachievers. Morisano and Shore (2010) heralded this specific recommendation, specifically calling for personal goal setting as a means to “tap the potential of the gifted underachiever” (p. 249). They suggest that participating in personal and intensive goal setting activities “might serve as an effective intervention, not only for developing self-understanding but also for cultivating the creative and academic potential and productivity of underachieving bright students” (p. 250). Because goal setting is intertwined so tightly with motivation and self-efficacy, the benefits of a personal goal setting exercise would not only unlock gifted underachievers’ academic potential, but also enhance students’ satisfaction in their overall lives.

Conclusion

The research is clear that effective interventions are needed to reverse underachievement in the gifted population. Although several instructional and counseling models have shown some promise in reversing underachievement for these students, most are costly, time-consuming, or

difficult to implement by individual school sites in an era of standardization coupled with economic austerity. What is needed is an intervention that can academically motivate students, which is both cost-effective and easy to implement in school districts with varying structures and curricula. The present study seeks to do just this through a personal goal setting intervention.

The personal goal setting intervention employed in this study builds upon research in gifted underachievement, motivational theory, and goal setting theory. This study rests on the assumption that setting goals, identifying sub goals, creating a plan to work toward those goals, and being committed to goal attainment are important factors in academic achievement. The Urban Union School District, as with most other school districts nationwide, does not currently implement a goal setting component in their curricula. This intervention will give identified gifted underachieving high school students an opportunity to set personal goals that are meaningful for them, which I hope will translate into increased motivation and academic achievement in this population of bright, underperforming students.

CHAPTER THREE

METHODOLOGY

As discussed in the previous chapters, underachievement in gifted students has been established as a nationwide problem that correlates with lower-than-expected academic achievement, and at its extreme, has led to dropping out in this vulnerable population (Renzulli & Park, 2000, 2002; Roberston, 1991). Recent research indicates that gifted underachievers as a group often display a lack of motivation and self-regulation in the school setting (McCoach & Siegle, 2003). Students report low motivation in the process of schooling, fail to purposefully direct their efforts while at school, and do not value the goals the school has for their learning.

I conceptualized a solution to the problem of gifted underachievement through the framework of goal setting theory. Goal setting theory purports that if two individuals have equal aptitudes, any divergence in performance must be motivational in nature (Latham & Locke, 1991). Accordingly, my study sought to implement a goal setting intervention to enhance goal-directed behavior, which aimed to increase gifted underachievers' academic attitudes, ultimately leading to enhanced academic achievement. The research questions that guided my study were:

1. To what extent does a personal goal setting intervention impact academic attitudes in gifted underachieving high school students?
2. To what extent does a personal goal setting intervention impact actual academic achievement in gifted underachieving high school students?
3. What do students say are the benefits of features of the goal setting intervention, and does student belief in the value of the intervention relate to actual academic increase?
4. To what extent do students articulate clearly defined personal goals, and which, if any, patterns emerge in students' responses?

Research Design

This study employed an experimental design to address the problem of underachievement in high school gifted students, specifically targeting students' academic attitudes, such as academic self-perception, motivation, future orientation, and theory of intelligence, as well as their academic achievement. The experimental design featured a mixed methods control-group approach to gauge the effectiveness of a goal setting intervention over the course of a 20-week period. This study's intervention was modified from an existing intervention that was successful in increasing achievement and academic persistence in underachieving undergraduate students (Morisano et al., 2010). Students identified as gifted underachievers were randomly assigned to one of two groups: a treatment group that received the goal setting intervention, or a wait-list control group that received no intervention until all data had been collected.

I selected an experimental design because recent empirical research indicates that goal setting has the potential to reverse underachievement in the gifted population (Morisano et al., 2010; McCoach & Siegle, 2003). Substantial qualitative research that explored gifted students' and teachers' experiences in the educational process currently exists (Kavensky & Keighley, 2003; Emerick, 1992; Reis & McCoach, 2000), and quantitative studies that produced generalizations on students' background and personal characteristics are also readily available (Peterson & Colangelo, 1996; McCoach & Siegle, 2003; Rezulli & Park 2000, 2002). However, interventions that sought to reverse underachievement in the gifted population have rarely been studied, and the efficacy of potential solutions has yet to be established (Reis & McCoach, 2000; Morisano & Shore, 2010). Furthermore, interventions that have been examined primarily include instructional strategies to reverse underachievement in this population (Morisano & Shore, 2010) instead of a counseling approach. As Richert (1991) has argued, social-emotional

needs of a child should be considered as important as academic achievement. This goal setting intervention was uniquely warranted because it sought to contribute to higher socio-cognitive experiences, as well as academic achievement, in underachieving gifted students.

Data collected for this study was both quantitative and qualitative in nature. Quantitative data was supplied from student responses on reliable measures of academic attitudes, as well as through grade point average. This study was enhanced by a qualitative component because it explored subjective phenomena (i.e., motivation, self-regulation, future orientation, theory of intelligence, and the act of setting goals) and their meaning to the student participants who experienced this intervention (Maxwell, 2004). As I sought to examine the meaning of the students' experiences in this intervention, analyzing students' perceptions provided a more rounded picture of students' thoughts regarding their goal setting experience. Additionally, a qualitative component contributed to the depth of this study because I sought to build upon goal setting theory to develop a causal explanation between this intervention event and specific outcomes (Maxwell, 2004). This qualitative element was implemented concurrently with an experimental design to link the intervention with the students' experiences, thus strengthening the relationship between the intervention and measured outcomes.

Overall, there is substantial research on students' personal and academic experiences, which have been gathered through both qualitative and quantitative methodology (Reis & McCoach, 2000). These data provide strong evidence that research has identified who is underachieving and the potential causes for that underachievement. Employing a single-method qualitative or quantitative design that sought to describe gifted underachievement, therefore, would not contribute much to the body of research on this topic. However, because few empirical studies exist that attempt to reverse gifted underachievement, particularly through the

lens of goal setting theory, an experimental design that employed mixed methods was most appropriate for this study.

Methods

Site

New City High School, a pseudonym, was chosen as the site for this study. New City High was founded in the 1930s as part of a large, urban school district in the western United States and currently educates approximately 3,000 students in the 9th through 12th grades. For the 2010-2011 academic year, 63% of New City High students graduated in four years, with a 2010 NCES graduation rate of 83.4% (CDE, 2011). New City also educates a diverse student body. In 2011, students attending New City High were racially and ethnically identified as the following: 51.1% Hispanic or Latino, 25.1% African American or Black, 17.8% White, 4% Asian, 1.3% Filipino, 0.4% Native American or Alaskan Native, and 0.3% Pacific Islander (CDE, 2011).

New City High School was chosen as the intervention site because it had a high population of underachieving gifted students. Of the 362 identified academically gifted students attending New City, 52% had a grade point average of 3.0 or below, which for the purpose of this study defined them as underachieving. This grade point average was determined to be “underachieving” for gifted students, as these students are in peril of not being qualified to enter the University of California system. Because of the large underachieving gifted student population, an intervention that had the potential to enhance students’ attitudes toward school would be beneficial for these students to increase their self-regulatory efforts, thereby leading to increased student achievement.

Population

The population for this study was high school gifted underachievers. High school is a critical time to intervene in gifted underachievers' schooling because high school students who do not engage with their academic experience may reject the school system altogether and drop out (Renzulli & Park, 2000, 2002; Robertson, 1991). Choosing high school gifted underachievers as a population allowed me to implement a personal goal setting intervention that focused on enhancing academic attitudes at this critical age, which had the potential to concurrently increase students' achievement. Furthermore, an intervention seeking to reverse underachievement through personal goal setting had not yet been studied with high school students, yet had been called for in recent literature that examined the correlation between personal goal setting and increased academic achievement and persistence in underachieving undergraduate students (Morisano et al., 2010; Morisano & Shore, 2010).

The population of this study was narrowed to 10th, 11th, and 12th grade gifted underachievers. Ninth graders were excluded because underachievement might be caused by students' transition from middle to high school, and 9th students who are doing poorly thus may not demonstrate true underachievement in their first year of high school. Students in the 10th, 11th, and 12th grades, however, had more time to adjust to the demands of high school, giving them an opportunity to firmly set an academic pattern of chronic underachievement that merited intervention.

Defining Giftedness and Underachieving Giftedness

It is important to note how the term "gifted" was operationalized for this project. For the purpose of this study, gifted students were those identified as such in their school district.

“Giftedness” is especially important to define because no standard definition of giftedness exists in either research (Reis & Renzulli, 2010; Reis & McCoach, 2000) or at the state level (CDE, 2005). In the sample district, students are identified as “gifted” or “talented” in one of seven categories: “gifted” in intellectual, high achievement, specific academic ability, or “talented” in creative ability, leadership ability, visual arts ability, or performing arts ability. Giftedness in intellectual ability is defined as passing a reasoning test at or above the 95th percentile. High achievement is defined as two consecutive years of obtaining an advanced score of 450 or above on the California Standards Test in both English and mathematics, as well as grades of A in these subjects for both the second and third trimesters (for elementary school students, a grade of 4 is considered an A). To be qualified as gifted in a specific academic ability, a student must demonstrate three consecutive years of advanced scores of 450 or above on the California Standards Test and grades of A’s or 4’s in either English language arts or mathematics in both the second and third trimesters. Identification for talent in creative ability, leadership ability, visual arts ability, and performing arts ability are not judged by achievement test scores and high grades, but instead by a portfolio or demonstration for district administrators, whereby the student exhibits advanced capability in the ability of interest.

Because my study focused on academic achievement, only students who are “gifted” in the categories of intellectual, high achievement, or specific academic ability were considered for participation in this study. Students in these categories had demonstrated a combination of high levels of critical thinking, reasoning ability, and proven academic potential at some point in their school careers in order to be labeled as “gifted.” Students identified as “talented” in creative ability, leadership ability, performing arts, or visual arts had never been required to demonstrate

high levels of academic prowess to qualify for their “talented” designation, and therefore were excluded because their giftedness was not based upon previous academic achievement.

Defining “underachieving” in gifted students also had a specific definition for the purpose of this study. The literature on gifted students has varying definitions of underachievement, and no standard of underachievement exists in the research (Reis & McCoach, 2000; Reis & Renzulli, 2010; Baum et al., 1995). A general definition of underachievement is the discrepancy between measured potential and actual performance (Colangelo & Assouline, 2000). This study operationalized underachievement in gifted students as having a cumulative grade point average at or under 3.0, as this level of performance would place them in jeopardy of not qualifying for entrance into the University of California system.

Sample Selection

At New City High School, 362 students were identified as academically gifted in the 9th through 12th grades. Of these students, 127 were identified as 10th, 11th, and 12th grade gifted underachievers in the intellectual, high achievement, or specific academic ability categories, having a grade point average at or below 3.0, making them eligible for this study. When classified by gender, 37% of eligible students were female and 63% of eligible students were male. When eligible students were classified by ethnicity, 67% were Latino, 21% were Black, and 12% were Caucasian.

To recruit participants for this study, all students in the 10th, 11th, and 12th grades who fit this study’s definition of “gifted underachiever” received a flyer that included an invitation to one of two after-school parent-student informational sessions. School administration determined which students were to receive flyers to ensure access to student data was protected until parents

and students had given consent for the project. Families who could not attend the sessions but were interested in the project could also indicate on the interest form an alternate time in which to set up a brief appointment to discuss the project with the principal investigator.

During the informational sessions, families were notified that students were selected to participate in this study because they might benefit from a special program that aimed to increase school achievement. They were also informed that if selected to participate, students would be randomly assigned to either a “round one” intervention that would happen in the fall, or a “round two” intervention that would happen in the spring, thereby allowing for a wait-list control. Schedules for both “round one” and “round two” intervention sessions were displayed, and a brief overview was given that described the nature of the intervention activities. Families were also advised that students would receive \$20 if they completed the entire intervention, as well as six hours of Service Learning credit for their participation in the study, with no prorated compensation given for partial completion of the intervention.

After the brief overview of the project, families received parent consent and student assent forms with an envelope. Families were told that they could either sign their forms at the meeting, or take them home for further review and return them in a designated box in the office over the course of the next week. The principal investigator then invited families to come individually into an adjoining private room to discuss their questions or receive more information should they wish to obtain further clarification of the project.

Once all interested families had returned parent consent and student assent forms, 44 students were randomly assigned either the treatment or control group. Complete randomization, however, was mediated by a blocked design. Before random assignment, participants were blocked by cumulative grade point average to ensure that the same degree of underachievement

existed in each group, with the blocked groups being: 0.01 – 1.00, 1.01-2.00, and 2.01-3.00. Students' names from each blocked grade point average were placed into a box and drawn randomly to assign them into treatment and control groups. Table 1 lists the demographic data for both the treatment and control groups:

Table 1

Student Sample Demographics (N=44)

Demographic Information	Treatment Group	Control Group
Gender		
Female	55%	50%
Male	45%	50%
Ethnicity		
Hispanic or Latino	72%	55%
African American	14%	36%
White	14%	9%
Grade Level		
10 th Grade	73%	36%
11 th Grade	18%	36%
12 th Grade	9%	27%

The Project

Overview

The goal setting intervention employed in this study was adapted from goal setting exercise designed for underachieving undergraduate students. Morisano, Hirsh, Peterson, Pihl, and Shore (2010) first used the intervention, which based upon an original goal setting intervention created by Peterson and Mar (2004). This type of goal setting intervention had been proposed as a cost-efficient, effective way in which to “ripen self-concept, self-efficacy, and self-regulation skills, all of which could be viewed as contributing to a child’s positive social and emotional development and achievement capability” (Morisano & Shore, 2010, p. 255).

This study’s intervention involved two steps that goal setting research has deemed critical to a successful goal setting experience (Morisano et al., 2010). Step 1 involved reflecting upon a desired future and asked participants to think what their ideal future would look like. In this step, students wrote for both shorter (i.e., three minutes) and longer (i.e., 10 minutes) amounts of time to answer prompts relating to an imagined future that they found desirable. The duration of Step 1 was approximately 1.25 hours during a one-session period. Step 2 asked students to consider their ideal futures to create two specific goals that they could pursue to reach their ideal future. Students not only identified their goals, but also strategized about their goals by breaking them into sub-goals, created a plan to achieve their goals, reflected on what motivated them to realize their goals, and detailed how attaining their goals would impact their friends and family. Step 2 was completed in one session during a 1.25-hour session. For both sessions, students were given the choice to respond to the reflective prompts either by entering their responses into an online program, or by handwriting their responses in a pre-made packet.

This intervention was modified from the original format and implementation, as the students in this project were younger and presumably less independent than the original participants, who were college students. This project's goal setting intervention consisted of two 1.25-hour sessions, for a total of 2.5 hours, as opposed to one 2.5-hour session in the original intervention employed by Morisano and colleagues (2010). The two sessions were held after school on a high school campus in a small-group format, with a one-week interval between each session. This modification was made from the original intervention that consisted of one 2.5-hour time block done independently from home, as high school students required a more segmented time frame in which to complete the intervention. Additionally, students worked under the guidance of a goal setting facilitator who conducted the intervention in a small group setting, rather than requiring participants to complete the intervention independently. This facilitation was done to clarify concepts and provide a structured environment in which to implement the intervention. Students in this intervention version also received revised vocabulary in the goal setting prompts that aligned more closely with their academic language. Finally, the original intervention asked participants to create five to eight goals. Because this study involved goal setting for younger students, my intervention asked students to create only two goals: one personal goal and one academic goal. All stages of the original intervention were employed in this study, but in a manner consistent with high school students' developmental level.

Session One

In the first session, students were informed that they were chosen to participate in this project because their school believed that they could benefit from a goal setting task that would

help them in thinking about and successfully planning for their future. The facilitator told the students that the first session would require them to write responses to several questions that help them to clarify what they would like their future to look like. Students were then directed to respond to a series of seven prompts that require them to free-write for specified periods of time (i.e., 2-3 minutes) without concern for spelling and grammar. Students had the opportunity to either type their responses into an internet-based program or handwrite their responses in a pre-made packet. Students answered questions that asked them to consider: 1) what they could do better; 2) what they would like to learn, both short- and longer-term; 3) habits they would like to improve regarding their school, health, and family lives; 4) their most desirable social lives; 5) how they could improve their family and romantic lives; 6) their most desirable careers; and 7) qualities they admired in other people. The facilitator guided the students by reading the prompts and answering any questions students had about the prompts before they began reflecting and writing. After writing their responses to the shorter prompts, students were given a 10-minute break for refreshments.

Following the conclusion of the break, students were allowed to review their writing from the first half of the session and revise their writing, if desired. The facilitator then guided students to write a longer passage, in which students composed an image of their ideal futures based upon their previous responses. Students were asked to consider multiple questions when writing about their ideal future, such as: Who do you want to be? What do you want to do? Where do you want to end up? Why do you want these things? How do you plan to achieve your goals? Participants were given approximately 10 minutes to write their response to this prompt. The facilitator then told the students that they would now think about an undesirable future, one that they would like to avoid. Students were asked to reflect upon people they have

known who have made poor decisions, as well as consider what their future might look like if they let their weaknesses or bad habits rule their lives. The facilitator then directed students to write continuously for 10 minutes to paint a picture of their undesirable future.

The facilitator then asked students to write briefly about a person who inspired them to reach their potential. Although this prompt was not part of the original intervention, it was included to prevent students from leaving the intervention thinking about an undesirable future. At the conclusion of their brief writing on this prompt, students were thanked for their participation and were reminded of their next session date.

Session Two

The second session began with students reviewing their writing on their ideal and undesirable futures from the first session. Students were given 10 minutes to review and revise their writing from this session, if desired. The facilitator then informed students that they would next create two goals that would help them get to their desirable futures: a personal goal and an academic goal. The facilitator instructed the students that the goals they create should be SMART: *specific* and not too general; *measurable* in smaller sub-goals; *attainable* and able to be realistically reached with a viable plan; *rationalized* through explanation of why this goal is important for them to meet; and *time-bound* in a timeframe of approximately one year (Locke & Latham, 2002; Fielding, 1999). Students were given examples of SMART goals that made goal attainment more likely, as well as non-examples of SMART goals that were not appropriate to pursue. Students then discussed the attributes of both sets of goals that made goal attainment more likely or unlikely, respectively.

Students then began the process of setting a personal goal, which was defined as a goal from any area of life that they felt was important. The facilitator guided students through a series of five exercises that required them to strategize about their goal and think more deeply about the reasons for pursuing the goal, as well as strategies to attain their goal. Students first defined their goal, and then contemplated their motives for achieving their goal, writing why this goal was important for them to pursue and encouraging them to determine whether the goal was their own or imposed from another person. Students then described how attaining their goal would impact not only their lives, but also the lives of their friends, family, and community members to help them consider the broader social affect of pursuing their goals. In the next exercise, students brainstormed several strategies to meet their goal, including creating smaller sub-goals. After students created sub-goals, they then identified possible obstacles to pursuing their goals and listed several solutions to overcoming those obstacles. Finally, students created short-term benchmarks that will inform them if they were making progress toward goal attainment.

After creating their personal goal, students were given a 10-minute break for refreshments. At the conclusion of the break, the facilitator reminded students about the features of a SMART goal, and asked students to keep those features in mind when creating their next goal, which was academic in nature. Students were then led through the same goal setting process as the personal goal reflection, where they identified a goal and then strategized about that goal through examining their motives, considered the broader impact of goal attainment, created strategies and sub-goals to meet their goal, identified possible obstacles in meeting their goal, and described how they will monitor progress toward goal attainment. After elaborating on their academic goal, students were given the opportunity to review their writing from the second

session, and revise any writing if they so desired. Students were thanked for their participation and reminded to return the following day to complete the project surveys.

Post-Intervention Data Collection

Immediately after the intervention, treatment students completed an exit questionnaire to give their opinions regarding the goal setting project. One-day post-intervention, treatment students additionally completed the three survey instruments to obtain their responses on measures of academic attitudes. They were also given a copy of their goal setting writing for future reference. Three-months post-intervention, students were once again given the three survey instruments to obtain their responses on measures of academic attitudes. Treatment students were additionally asked to respond to a short writing prompt that asked them to briefly talk about their goals (see Appendix A).

Control Group

Students who were randomly assigned to the control group did not participate in the intervention during the fall; they were, however, given the opportunity to experience the same intervention during the spring after all data was collected, allowing for a wait-list control group. Data for the control group was collected for the three pre- and post-test surveys for academic attitudes at the same time intervals as the treatment group. At three-months post-intervention, control students were also directed to respond to a short writing prompt that asked them to briefly talk about their goals, which was identical to the prompt completed by the treatment group (see Appendix A).

Measures

Motivation and Self-Regulation

The first research question employed the School Attitude Assessment Survey–Revised (SAAS-R) (McCoach & Siegle, 2003), an instrument that examined high school gifted underachievers’ academic attitudes. The SAAS-R is a 35-item survey that measures students’ attitudes toward schooling in five discreet sub-scales, with demonstrated internal consistency (McCoach & Siegle, 2003): Academic Self-Perceptions ($\alpha = .86$), Attitude Toward School ($\alpha = .89$), Attitude Toward Teachers ($\alpha = .87$), Goal Valuation ($\alpha = .89$), and Motivation/Self-Regulation ($\alpha = .91$). Participants answered items on these factors on a 7-point Likert scale, ranging from Strongly Disagree (1) to Strongly Agree (7). The SAAS-R has demonstrated validity for use in gifted achievers and underachievers, as well as for non-gifted achievers and underachievers (McCoach & Siegle, 2003; Suldo, Shaffer, & Shaunessy, 2005). The SAAS-R was administered to student participants in this study pre-intervention, one day post-intervention, and approximately three-months post-intervention to test for differences in self-reported academic attitudes across the three timepoints. Examples of questions for the five factors measured are located in Table 2, and a copy of the instrument is provided in Appendix B.

Table 2

SAAS-R Example Items by Factor

Factor	Item Example
Academic Self-Perception	I am smart in school.
Academic Self-Perception	I am capable of getting straight A's.
Motivation/Self-regulation	I spend a lot of time on my schoolwork.
Motivation/Self-regulation	I work hard at school.
Goal Valuation	Doing well in school is one of my goals.
Goal Valuation	It's important for me to get good grades in school.
Attitudes Toward Teachers	I relate well to my teachers.
Attitudes Toward Teachers	My teachers make learning interesting.
Attitudes Toward School	This is a good school.
Attitudes Toward School	I am glad that I go to this school.

Future Orientation

Students' future orientation, a concept related to goal setting, was obtained through the use of the Future Orientation Scale (Steinberg et al., 2009), a 15-item questionnaire that included five questions in each of three subscales: Planning Ahead ($\alpha = .70$), Time Perspective ($\alpha = .55$), and Anticipation of Future Consequences ($\alpha = .62$) (Steinberg et. al., 2009). Each item asked

students to respond to pairs of statements separated by the word “BUT” and asked them to choose the statement that best matched their preference. After deciding which statement in the pair best described them, they then chose whether that statement was “really true” or “sort of true” in describing them. The paired statement presentation of this instrument was intended to reduce socially desirable responses of the participants (Harter, 1982; Steinberg et al., 2009). Items were graded on a 4-point scale, ranging from “really true” for one of the paired statements, to “really true” for the other paired statements. Higher scores indicated higher future orientation, with the mean of all items indicating a students’ overall future orientation, and the mean of subscale items indicating the student’s subscale orientation.

The first subscale, Time Perspective, posed questions such as, “Some people take life one day at a time without worrying about the future BUT other people are always thinking about what tomorrow will bring.” The second subscale, Anticipation of Future Consequences, asked questions such as, “Some people have trouble imagining how things might play out over time BUT other people are usually pretty good at seeing in advance how one thing can lead to another.” The third subscale, Planning Ahead, included items such as, “Some people think that planning things out in advance is a waste of time BUT other people think that things work out better if they are planned out in advance.” The Future Orientation Scale was administered to student participants pre-intervention, one-day post-intervention, and approximately three-months post-intervention to test for differences in self-reported academic attitudes across the three timepoints. A copy of the Future Orientation Scale is provided in Appendix C.

Theory of Intelligence Scale

The Theory of Intelligence Scale included six items that asked participants to select their level of agreement on statements that reflected either an entity theory of intelligence or an incremental theory of intelligence, with data from six validation studies reporting alphas ranging from .94 to .98 (Dweck, Chiu, & Hong, 1995). Participants responded to the six items on a six-point Likert scale, ranging from Strongly Disagree (1) to Strongly Agree (6), with higher scores indicating an entity theory of intelligence and lower scores indicating an incremental theory of intelligence. The Theory of Intelligence Scale was administered to student participants pre-intervention, one-day post-intervention, and approximately three-months post-intervention to test for differences in self-reported academic attitudes across the three timepoints. A copy of the Theory of Intelligence Scale is provided in Appendix D.

Academic Achievement

The second research question focused on students' change in academic achievement between pre- and post-intervention, and the data collected was quantitative. The indicator of grade point average was chosen to reflect academic achievement for this study because it demonstrated a holistic picture of student achievement over time. To answer the second research question, student grade point average was calculated for two timepoints to test for differences in students' academic achievement: the pre-intervention semester, as well as the post-intervention semester, approximately 15 weeks after the intervention concluded. Grades were calculated as unweighted averages to indicate overall tendencies in students' academic performance.

Students' Perception of the Benefit of the Goal Setting Intervention

The third research question examined students' perceptions of goal setting through an exit questionnaire given immediately after the last intervention session to only the treatment participants. Students responded to 10 items that asked them to evaluate aspects of the intervention, such as whether they liked the intervention, whether they would recommend the intervention to their friends, whether they would be willing to participate in more goal setting exercises, and whether they thought the intervention was worthwhile to them. Items were graded on a 7-point Likert scale, ranging from Strongly Disagree (1) to Strongly Agree (7). This prompt tool provided quantitative data to gauge students' opinions of the intervention, as well as determine whether having positive opinions about the intervention and goal setting in general were associated with any change in students' actual achievement scores. A copy of the exit questionnaire is located in Appendix E.

Students' Articulation of Goals

The fourth research question examined three aspects of students' writing: 1) the degree to which treatment students were able to articulate their goals during the intervention; 2) the degree to which both treatment and control students were able to articulate their goals three-months post-intervention on their responses to a short writing prompt; and 3) overall patterns that emerged in students' writing throughout the intervention. To determine how well students were able to articulate goals, a 3-point rubric was created to evaluate how well students created SMART goals, which include five important aspects of well-created goals: specific, measurable, attainable, rationalize, and time-bound (Locke & Latham, 2002; Zimmerman, 2008). The same

rubric was employed for treatment students' writing during the intervention, as well as both treatment and control students' writing three-months post-intervention (see Appendix F).

Data Analysis

To analyze for differences in students' self-reported academic attitudes on the three survey instruments, results from the measures of academic attitudes were compared through a repeated measures analysis of variance (ANOVA) test. Students in both treatment and control groups responded to the SAAS-R, the Future Orientation Scale, and the Theory of Intelligence Scale at three timepoints: pre-intervention, one-day post-intervention, and three-months post-intervention. Significant effects were explored through post-hoc Bonferroni tests to examine the nature of the impact. Student achievement data were analyzed quantitatively as well, with pre-intervention and post-intervention grade point averages between groups were compared through a repeated measures ANOVA to test for differences.

Students' perceptions of the goal setting intervention were analyzed for only the treatment group, as they were the only group to experience the intervention during the data collection window. Responses on the Likert-scaled questions were averaged to indicate students' opinions of intervention. Students' responses were also correlated to the change in academic achievement to determine whether students' perceptions of the intervention was related to change in students' grade point average between pre- and post-intervention.

Students' ability to clearly articulate goals was determined through qualitative analysis of both treatment students' writing during the intervention, as well as both treatment and control students' short writing piece three-months post-intervention. To determine how well students articulated their goals, student writing was graded against a 3-point rubric to ascertain the degree

to which their goal setting was specific, measurable, attainable, rationalized, and time-bound (see Appendix F). Two trained raters independently scored all student writing to enhance credibility of the findings. As such, Kappa values were calculated for each independently subscale of the rubric, and composite goal scores from the raters, which were summed scores for all of the subscales, yielded intraclass correlation (ICC) scores to ensure adequate agreement between raters.

Finally, students' responses during the intervention were examined inductively to allow themes to emerge from the data. The qualitative data analysis involved the "coding of raw data and the construction of categories that capture relevant characteristics" of the students' writing (Merriam, 2009, p. 205). Qualitative analysis determined whether any patterns in students' responses existed throughout the intervention and helped to determine the "story" of the gifted underachieving high school students in this sample.

Ethical Issues

Project Protocol

Ethical protocol was followed in both the data collection and data analysis phases of the study. Before selecting the site, New City High's school district was consulted to obtain permission prior to implementing the intervention. After gaining permission from the district, the principal of New City High agreed to implement the study at the high school. Students to be recruited were identified by school administrators, who had regular access to such data, and parent consent and student assent was obtained before the researcher reviewed any student-level data. The confidentiality of all students was also ensured, as all data was coded and stored in a locked cabinet throughout the duration of the study. Harm to participants in the form of missed

educational opportunity was additionally minimized, as students completed the intervention after school. Finally, all students who obtained parental consent and student assent were given access to the intervention through the inclusion of a wait-list control group.

Ethical procedures were additionally followed during data analysis. After student data was analyzed, all records related to the study (i.e., intervention data, achievement data, and reflective responses) were destroyed to protect participants' privacy. Student data for this study was additionally reported in an aggregate fashion for quantitative data, and student pseudonyms were employed during analysis and reporting of individual student written responses to ensure anonymity.

Role Management

In conducting this study, I presented myself as a graduate student in UCLA's Department of Education instead of as an instructional coach at the district level. I made the choice to present myself as such for several reasons. First, I wished to bolster my credibility in the role of researcher at both the district and school site levels. If I emphasized my employee status instead of my researcher status, I felt that the importance of this project might have been lessened and viewed as another attempt at district reform. Secondly, emphasizing my district employment might have produced reactive responses from the students, who might have wished to please me and respond in a certain manner if they believed that I could influence their grades or school status in any way. Identifying myself as a graduate researcher was ethical, as my position as an instructional coach at an elementary school had no bearing at the potential site where my study was conducted.

Reliability and Validity

Reliability was enhanced by the strict protocol required by this intervention. Each participant received the exact same intervention through a scripted format, to which any student could respond in either their own handwriting or through an internet program. This allowed every participant to receive the exact same protocol in the exact same manner for each treatment session. Additionally, dependability of analysis of student intervention written responses was enhanced through a systematic data analysis and coding process. The credibility of this study's qualitative data analysis, which relied in part on rubric scores, was increased by the presence of two raters who were both trained in qualitative data analysis and were familiar with the writing abilities of the sample students who participated in this study.

This study built in safeguards to increase the validity of the findings. The first research question, which examined students' academic attitudes, employed the SAAS-R (McCoach & Siegle, 2003a), a research tool that has been tested for construct validity and reliability in nationwide samples of both gifted and non-gifted high school students (McCoach & Siegle, 2003; Suldo et al., 2008). This instrument was used on a sample of 44 students, which is deemed to be an adequate sample size to test for differences in a sample (Agresti & Finlay, 2008). The Future Orientation Scale (Steinberg et al., 2009), as well as the Theory of Intelligence Scale (Dweck et al., 1995), have also indicated adequate reliability in previous research studies. Achievement data was collected with an adequate sample, with the indicator of grade point average being generally accepted as a valid measure of student achievement.

Two threats to validity presented themselves throughout the course of this study. One such threat involved the effect of history on the students who agreed to participate in the project. Because I notified the principal and teachers that a certain group of students are of interest

because of their present levels of academic performance, the school might have purposefully or inadvertently intervened with these students, which would have produced a confounding effect in the study's results. This threat was minimized, however, by employing a control group. A second threat concerned the construct validity of this study, commonly referred to as the Hawthorne effect. Because students in this study were selected as "important" and given "special" treatment that their peers did not receive, they might have changed their behavior and attitudes as a result of the attention they received. Although employing a placebo intervention may have reduced the Hawthorne effect's threat to validity, the current study was unable to provide such a safeguard.

Summary

Controlled empirical studies seeking to reverse underachievement in the gifted population have rarely been documented in the literature (Reis & McCoach, 2000; Reis & Renzulli, 2010). This intervention, employed in an experimental design, sought to provide evidence that the use of personal goal setting could indeed reverse underachievement in the underachieving gifted population. If this intervention could be successful in increasing students' academic motivation and achievement, the design and implementation of the goal setting program would allow for replication with other groups of students, thereby providing a clear, cost-effective way of allowing students to identify their own goals and guide them toward self-regulation strategies to meet their individual academic potentials.

CHAPTER FOUR

RESULTS

This study sought to determine to what extent, if any, a goal setting intervention could impact academic attitudes and achievement of a group of high school gifted underachievers. This study additionally examined how well high school gifted underachievers could articulate clearly defined goals both during and after a goal setting intervention. The results of this study are organized around four research questions, answered below.

Research Question 1: To What Extent Does a Personal Goal Setting Intervention Impact Academic Attitudes in Gifted Underachieving High School Students?

To determine the impact, if any, of a goal setting intervention on student attitude and engagement behaviors, three surveys were given to participants at three time points: pre-intervention, one-day post-intervention, and three months post-intervention. The following surveys are briefly described, followed by an analysis of between- and within-subjects differences between pre- and post-intervention.

School Attitude Assessment Survey – Revised

The School Attitude Assessment Survey-Revised (SAAS-R) is a 35-item survey that measures students' attitudes toward schooling in five discrete sub-scales (McCoach & Siegle, 2003): Academic Self-Perceptions ($\alpha = .86$), Attitude Toward School ($\alpha = .89$), Attitude Toward Teachers ($\alpha = .87$), Goal Valuation ($\alpha = .89$), and Motivation/Self-Regulation ($\alpha = .91$). Participants responded to the items in the SAAS-R on a 7-point Likert scale, ranging from

Strongly Disagree (1) to Strongly Agree (7). Table 3 displays the mean group scores and standard deviations for the repeated measures of this survey instrument.

Table 3

Mean Group Scores for Repeated Measures of SAAS-R Scales (N=44)

	Pre-Test Mean (SD)	Post-Test 1 Mean (SD)	Post-Test 2 Mean (SD)
Academic Self-Perception			
Treatment Group (n=22)	5.05 (0.75)	5.31 (0.79)	5.12 (0.89)
Control Group (n=22)	5.32 (0.82)	5.42 (0.87)	5.52 (0.79)
Attitude Towards Teachers			
Treatment Group (n=22)	4.92 (0.98)	5.12 (0.94)	4.81 (1.11)
Control Group (n=22)	5.21 (0.80)	5.27 (0.84)	5.21 (0.80)
Attitude Towards School			
Treatment Group (n=22)	5.40 (1.36)	5.64 (1.40)	5.25 (1.36)
Control Group (n=22)	5.74 (1.05)	5.78 (0.96)	5.79 (0.75)
Goal Valuation			
Treatment Group (n=22)	6.59 (0.54)	6.64 (0.54)	6.39 (0.70)
Control Group (n=22)	6.35 (0.60)	6.36 (0.54)	6.17 (0.87)
Motivation/ Self Regulation			
Treatment Group (n=22)	5.06 (0.98)	5.07 (1.14)	4.98 (0.83)
Control Group (n=22)	5.06 (0.96)	5.14 (0.85)	5.00 (0.80)

Future Orientation Scale

The Future Orientation Scale has 15 items and yields four scores: overall Future Orientation, Planning Ahead ($\alpha = .70$), Time Perspective ($\alpha = .55$), and Anticipation of Future Consequences ($\alpha = .62$) (Steinberg et al., 2009). Students responded to 15 paired-statement items that are separated by the word “but.” Participants chose the statement out of the pair that they felt was most like them, and then decided whether that statement was “really true” for them, or “sort of true” for them. Items were graded on a 4-point scale, ranging from “really true” for one of the paired statements, to “really true” for the other paired statements. Higher scores indicated higher future orientation. Table 4 displays the mean group scores and standard deviations for the repeated measures of this survey instrument.

Table 4

Mean Group Scores for Repeated Measures of Future Orientation Scales (N=44)

	Pre-Test Mean (SD)	Post-Test 1 Mean (SD)	Post-Test 2 Mean (SD)
Future Orientation			
Treatment Group (n=22)	2.56 (.39)	2.64 (.36)	2.54 (.35)
Control Group (n=22)	2.76 (.23)	2.77 (.29)	2.74 (.27)
Planning Ahead			
Treatment Group (n=22)	2.68 (.53)	2.78 (.54)	2.65 (.39)
Control Group (n=22)	2.73 (.39)	2.86 (.48)	2.75 (.41)
Time Perspective			
Treatment Group (n=22)	2.72 (.50)	2.83 (.46)	2.70 (.47)
Control Group (n=22)	2.91 (.38)	2.86 (.30)	2.93 (.33)
Anticipation of Future Consequences			
Treatment Group (n=22)	2.73 (.41)	2.75 (.38)	2.79 (.45)
Control Group (n=22)	2.95 (.44)	2.96 (.43)	2.95 (.35)

Theory of Intelligence Scale

The Theory of Intelligence Scale employs six items that asked participants to select their level of agreement on statements that reflected an entity theory of intelligence or an incremental theory of intelligence, with data from six validations studies reporting alphas ranging from .94 to .98 (Dweck, Chiu, & Hong, 1995). Participants responded to the six items on a six-point Likert scale, ranging from Strongly Disagree (1) to Strongly Agree (6), with higher scores indicating an entity theory of intelligence and lower scores indicating an incremental theory of intelligence. Table 5 displays the mean group scores and standard deviations for the repeated measures of this survey instrument.

Table 5

Mean Group Scores for Repeated Measures of Theory of Intelligence Scale (N=44)

	Pre-Test Mean (SD)	Post-Test 1 Mean (SD)	Post-Test 2 Mean (SD)
Treatment Group (n=22)	2.16 (.95)	1.97 (.94)	2.02 (.72)
Control Group (n=22)	1.80 (.76)	1.73 (.68)	1.83 (.76)

Within and Between Group Differences for Three Survey Measures

A 2 x 3 (group x time) repeated measures analysis of variance (ANOVA) test was used to test for differences in score changes in the three academic attitude surveys across three time points between the treatment and control groups. Because the sample size was less than robust, the threshold of significance was set at $p = .10$. Table 6 indicates the main effects of the three surveys used in this study.

Table 6

Summary of ANOVA Results for Main Effects of Time and Group for Academic Attitude Surveys

(*N*=44)

Measure	Sum of Squares	<i>df</i>	Mean Square	F
Academic Self Perception				
Main Effect of Time	.74	2	.37	4.47*
Main Effect of Group	2.30	1	2.30	1.24
Attitude Toward Teachers				
Main Effect of Time	.83	2	.41	3.24
Main Effect of Group	2.65	1	2.65	1.17
Attitude Toward School				
Main Effect of Time	.84	2	.42	2.33 [†]
Main Effect of Group	3.87	1	3.87	1.03
Goal Valuation				
Main Effect of Time	1.22	2	.61	5.88**
Main Effect of Group	1.98	1	1.98	1.91
Motivation/Self-Regulation				
Main Effect of Time	.27	2	.13	.59
Main Effect of Group	.03	1	.03	.02
Future Orientation				
Main Effect of Time	.11	2	.05	1.50
Main Effect of Group	1.02	1	1.02	4.34*
Planning Ahead				
Main Effect of Time	.44	2	.22	2.46 [†]
Main Effect of Group	.19	1	.19	.42
Time Perspective				
Main Effect of Time	.04	2	.02	.25
Main Effect of Group	.73	1	.73	1.93
Anticipation of Future Consequences				
Main Effect of Time	.03	2	.02	.24
Main Effect of Group	1.32	1	1.32	3.41 [†]
Theory of Intelligence				
Main Effect of Time	.37	2	.18	1.01
Main Effect of Group	2.23	1	2.23	1.40

[†]p≤.10, *p<.05, **p < .01

Main effects of time were demonstrated in two sub-scales of the SAAS-R: Attitude Toward School, $F_{(2,84)} = 2.33, p = .10$ and Goal Valuation, $F_{(2,84)} = 5.88, p < .01$. This finding illuminates a slight difference in how the students rated themselves in their attitudes toward school and their goals across the three interventions. Namely, all students increased on these measures from the first evaluation to the second evaluation (see Table 1).

The Future Orientation Scale also showed two main effects of group: for the overall future orientation score, $F_{(1,42)} = 4.34, p = .04$ and the Anticipation of Future Consequences sub-scale, $F_{(1,42)} = 3.41, p = .07$, indicating that students in the control group tended to rate themselves higher than the treatment group across these two measures for all time-points (Table 4). However, students' scores were consistent across the three time-points, thus demonstrating no significant effect of time. The Planning Ahead sub-scale additionally demonstrated a main effect of time, $F_{(2,84)} = 2.46, p = .09$, showing a marginal difference in how students rated their feelings toward future planning across the three survey administrations, with all students rising from the first survey administration to the second, then declining from the second survey administration to the third survey administration (Table 4).

The 2 x 3 repeated measures ANOVA test yielded one marginally significant interaction effect: Academic Self-Perception, $F_{(2,84)} = 2.87, p = .062$ (Table 7). There was also a significant main effect of time for this sub-scale, $F_{(2,84)} = 4.47, p < .01$ (Table 6). Thus, some difference did exist between the control and treatment groups in the Academic Self-Perception sub-scale across the three measured time points.

Table 7

Summary of ANOVA Results for Interaction Effects for Each Dependent Variable Scale (N=44)

Measure	Sum of Squares	df	Mean Square	F
Academic Self Perception	.47	2	.24	2.87 [†]
Attitude Toward Teachers	.34	2	.17	1.32
Attitude Toward School	.84	2	.42	2.32
Goal Valuation	.03	2	.02	0.12
Motivation/Self-Regulation	.02	2	.02	0.05
Future Orientation	.03	2	.02	0.43
Planning Ahead	.02	2	.01	0.09
Time Perspective	.21	2	.11	1.54
Anticipation of Future Consequences	.02	2	.01	0.18
Theory of Intelligence	.16	2	.08	0.45

[†]p<.10, *p<.05, **p < .01

Pairwise Bonferroni comparisons were conducted to determine how the treatment and control groups differed with regard to changes in group mean scores between various time points in Academic Self-Perception (see Table 8). Of the six possible Bonferroni comparisons of differences for the treatment and control groups, only the mean score difference between pre-intervention and one-day post-intervention for the treatment group was significant $M = .26$, 95% CI [.05, .48]), $p < .01$, suggesting that the treatment group experienced small but significant

positive gains in Academic-Self Perception between the pre-intervention survey and first post-test intervention survey, while the control group had no change during the same time.

Table 8

Bonferroni Comparisons for Academic Self-Perception (N=44)

Comparisons	Mean Score Difference	SE	95% CI	
			Lower Bound	Upper Bound
Treatment Group (n=22)				
Pre-test vs. Post-test1	.26*	.08	.05	.47
Pre-test vs. Post-test 2	.07	.09	-.15	.30
Post-test 1 vs. Post-test2	-.19	.09	-.40	.03
Control Group (n=22)				
Pre-test vs. Post-test1	.09	.08	-.12	.30
Pre-test vs. Post-test 2	.20	.09	-.03	.42
Post-test 1 vs. Post-test2	.10	.09	-.11	.32

†p<.10, *p<.05, **p < .01

Note: Mean score differences are calculated as scores from earlier tests subtracted from scores from later ones, (e.g., “Pre-test vs Post-test 1” = Score_{Post-test1} – Score_{Pre-test}).

Research Question 2: To What Extent Does a Personal Goal Setting Intervention Impact

Actual Academic Achievement in Gifted Underachieving High School Students?

To determine what impact, if any, a goal setting intervention had on student achievement, participants’ grades were collected for the semester preceding the intervention and for the semester completed after the intervention. Grade point average was then calculated for each

semester, with an “A” worth 4 points, a “B” worth 3 points, a “C” worth 2 points, a “D” worth 1 point, and an “F” or “fail” worth 0 points. Grades were unweighted to demonstrate impact in overall achievement in any course a student was taking, regardless of difficulty. A table displaying the mean grade point averages for both groups can be found in Table 9.

Table 9

Mean Group Scores for Grade Point Average (N=44)

	Pre-Test Mean (SD)	Post-Test Mean (SD)
GPA		
Treatment Group (n=22)	2.36 (.65)	2.60 (.53)
Control Group (n=22)	2.33 (.65)	2.27 (.50)

Initial ANOVA results (see Table 10) indicated that the interaction effect of time and group was marginally significant $F_{(1,42)} = 2.73, p < .10$. Plotlines also suggested that some difference did exist between groups (Figure 1). Paired t-tests were thus conducted to determine if any group differences existed for the change in grade point averages. Table 11 displays the results for these tests.

Table 10

Main Effects and Interaction Effects for Grade Point Average (N=44)

Measure	Sum of Squares	df	Mean Square	F
Grade Point Average				
Main Effect of Time	.34	1	.17	.97
Main Effect of Group	.73	1	.73	1.37
Interaction Effect	.48	1	.48	3.04 [†]

[†]p<.10, *p<.05, **p < .01

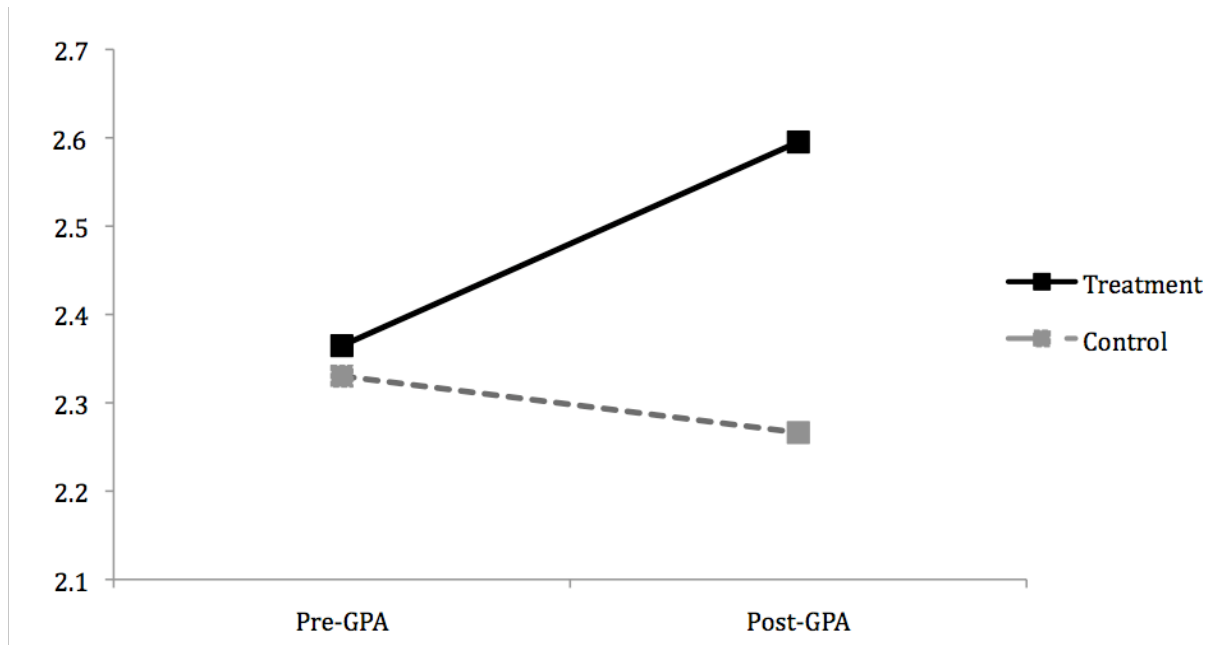


Figure 1. Changes in pre- and post-intervention GPA for treatment and control groups (N=44)

Table 11

Paired t-Tests for Group GPAs (N=44)

Group	Δ GPA Mean (SD)	t	df
Treatment Group (n=22)	.23 (.50)	2.17*	21
Control Group (n=22)	-.06 (.62)	-0.49	21

†p<.10, *p<.05, **p < .01

Note: Δ GPA is calculated as $GPA_{\text{Post-intervention}} - GPA_{\text{Pre-intervention}}$

A significant difference ($p < .05$) was found for the change in grade point average for the treatment group and control group. Thus, while treatment group students' grade point averages increased by an average of .23 grade points, control students' grade point averages decreased by .06 grade points.

To determine whether students' ability to articulate clearly defined goals was related to a difference in their academic achievement, correlation tests were run between the difference in students grade point average for pre- and post- intervention and students' mean SMART goal rubric scores for their personal, academic, and three-month post-intervention goal reflections. No significant correlations were found between the ability for students to clearly articulate their goals and the difference in their academic achievement between pre- and post-intervention.

Research Question 3: What Do Students Say are the Benefits of Features of the Personal Goal Setting Intervention, and Does Student Belief in the Value of the Intervention Relate to Actual Academic Increase?

Upon completing the intervention, students in the treatment group immediately took an Exit Questionnaire to gauge their perceptions of the goal setting project. The Exit Questionnaire consisted of 10 items graded on a 7-point Likert scale, ranging from Strongly Disagree (1) to Strongly Agree (7). Participants tended to agree quite strongly that the intervention was beneficial as well as enjoyable, with the mean score for items on the Exit Questionnaire being $M = 6.14$ ($SD = 1.03$). Means for individual items on the Exit Questionnaire are reported in Table 12.

Table 12

Mean Scores on Individual Exit Questionnaire Items (N=22)

Items	Mean Item Score	Standard Deviation
Item 1: I enjoyed this goal setting project.	6.182	0.733
Item 2: I will probably set and work toward goals in the future.	5.864	1.283
Item 3: I think setting goals is helpful to my future.	6.455	0.596
Item 4: Setting academic goals can help me do better in school.	6.545	0.596
Item 5: I would recommend this goal setting project to a friend.	6.318	0.894
Item 6: This goal setting project was valuable to me.	6.318	0.780
Item 7: I took this project seriously.	6.591	0.666
Item 8: I completed this project to improve my grades.	5.727	1.077
Item 9: I completed this project for the compensation.	5.182	1.680
Item 10: I believe that setting academic goals and breaking them down into smaller sub-goals can help me do better in school.	6.182	0.853

$M = 6.14$ ($SD = 1.03$)

To determine if students' perceptions of the goal setting intervention was related to a change in academic achievement, a three-item exit survey scale was correlated to the change in treatment students' grade point averages. The three-item scale, which directly tied to students' perceptions of goal setting being beneficial to their general or academic future (Cronbach's $\alpha = .71$) were: 3) I think setting goals is helpful to my future, 4) Setting academic goals can help me do better in school, and 10) I believe that setting academic goals and breaking them down into smaller sub-goals can help me do better in school. The correlation between the mean of these three items was not significantly correlated to the difference in students' pre-intervention and post-intervention grade point averages (Table 13).

Table 13

Correlation Between Exit Survey Scale and GPA Change for Treatment Group (N=22)

	Δ GPA
Exit Survey Scale	.09

[†]p<.10, *p<.05, **p < .01

Research Question 4: To What Extent do Students Articulate Clearly Defined Goals, and Which, If Any, Patterns Emerge in Students' Responses?

In research questions one through three, quantitative data were examined to determine differences in dependent variables pre- and post-intervention for both treatment and control groups. To determine how well students were able to clearly articulate goals, as well as to capture subtleties in the data, qualitative data from students' writing was next analyzed. For this study, a "clearly defined goal" was operationalized as a goal that is SMART: 1) *specific* as

opposed to general, 2) *measurable* by having discreet sub-goals or a mechanism to review goal progress, 3) *attainable* by being challenging yet not too easy, 4) *rationalized* by having congruence between the self-stated goals and significant others' goals for the student, and 5) *time-bound* in a relatively proximal timeframe. The rubric is based on research in successful goal setting, which indicates these criteria as necessary for appropriate goal setting (Locke & Latham, 2002; Zimmerman, 2008; Schunk, 2003). From these criteria, a 3-point rubric was created to assess students on their ability to create self-generated personal and academic goals according to the five indicators mentioned above (see Appendix F). Thus, the five sub-scales could each generate scores from 1 to 3, with students being able to receive a minimum composite SMART goal score of 5, and a maximum SMART goal score of 15.

Qualitative data derived from two sources: treatment students' actual writing during the intervention, and both treatment and control students' short writing reflection on goals that was completed three-months post intervention. Four findings emerged from the data: 1) overall, students in the treatment group were able to set defined personal and academic goals in their intervention reflections, 2) treatment students were more able to clearly articulate their goals than control students three months post-intervention, 3) treatment students' writing during the intervention indicated that they were unhappy with their current academic performance and wanted to improve to better their future, and 4) students in the treatment group indicated that time management was their biggest obstacle to achieving their goals.

Finding 1: Treatment Students' Ability to Articulate Goals in the Goal Setting Intervention

Participants in the treatment group completed their goal setting intervention in two one-hour-fifteen-minute sessions after school that occurred within a two-week timeframe. Students

were asked to reflect and write privately for a given time period for each of the 23 prompts in the intervention. The prompts included in the intervention were based on those employed in Morisano and colleagues' (2010) study with undergraduate students, but were modified in both vocabulary and the number of goals set to align to the high school population targeted in this study. The mean word count for participants' writing during the treatment was 1,870 words ($SD = 577.89$), with a minimum count of 974 words and a maximum count of 3,119 words.

During the first session, students reflected on multiple possible futures to prime them for the goal setting process. In the second session, students defined and elaborated on two goals they set for themselves: a personal goal and an academic goal. Before students wrote about their goals, I gave them instructions on how to set "clearly defined" goals using the SMART acronym: *specific, measurable, attainable, rationalized, and time-bound*. I then provided students with two examples of goals that were SMART, and asked students to keep these five features of effective goals in mind while writing about their own goals.

Participants began by defining one personal goal they had for themselves. Students then progressed through five steps that researchers have defined as beneficial to a goal setting experience: describing their motives for pursuing their goal, reflecting upon the impact attaining their goal would have on themselves and others, breaking their larger goal into various sub-goals, considering the obstacles they will face in pursuing their goal, and creating a progress monitoring plan to ensure goal progress (Morisano et al., 2010; Peterson & Mar, 2004). After students had completed reflection and writing around their personal goals, they then repeated the same process to set an academic goal. Students' writing was scored on the abovementioned SMART goal rubric, which yielded five sub-scale scores ranging from 1 to 3 on each sub-scale, for a total SMART goal score ranging from 5 (low) to 15 (high).

Ability to Set Personal Goals

When students defined a personal goal for themselves, they were asked to consider the features of a SMART goal as they responded to their prompts. The intraclass correlation between the two raters was high ($ICC = .98, p < .001$), indicating a substantial level of agreement between raters. Agreement was strongest for the *measurable* ($K = 1.00$), *attainable* ($K = 0.79$), *rationalized* ($K = 0.79$), and *time-bound* ($K = .79$) sub-scales, and lowest for the *specific* ($K = 0.67$) sub-scale. Inter-rater reliabilities for the five subscales are listed below in Table 14.

Table 14

Inter-rater Reliabilities for Scoring Personal Goal Writing (N=22)

Sub-Scale	Kappa	Significance	Level of Agreement
Specific	0.67	$p < 0.001$	Substantial
Measurable	1.00	$p < 0.001$	Perfect
Attainable	0.79	$p < 0.001$	Substantial
Rationalized	0.79	$p < 0.001$	Substantial
Time-bound	0.79	$p < 0.001$	Substantial

The average score given for participants' personal goals on the rubric was 12.2 out of 15 ($SD = 2.31$), with a maximum score of 15 and a minimum score of 8.5. The means and standard deviations for the five SMART sub-scale categories are detailed below in Table 15. The mean word count for personal goal writing was 430.28 words ($SD = 126.69$), with no significant correlation existing between the word count and overall SMART goal score.

Table 15

Means and Standard Deviations for Personal Goal Scores Along SMART Rubric

SMART Goal Sub-Scale	Mean	Standard Deviation
Specific	2.68	0.52
Measurable	2.09	0.91
Attainable	2.59	0.73
Rationalized	2.68	0.56
Time-bound	2.16	0.75
SMART Goal Composite	12.20	2.31

Analysis of student writing during their personal goal setting exercise revealed that treatment participants were best able to create *specific* personal goals ($M = 2.68$), as well as provide a *rationale* for why they wished to pursue that goal ($M = 2.68$). Students, however, had more difficulty creating a personal goal that was *measurable* ($M = 2.09$) and *time-bound* ($M = 2.16$). The general categories of goals set by students can be found in Table 16.

Table 16

Treatment Students' Personal Goal Categories

Category	Number of Students	Sample Goals
Health	6	"My goal is to run the LA Honda Marathon next March."
Extracurricular	5	"To be in my school's basketball team, whether it be JV, Varsity, or even the freshmen/sophomore team."
Job-Related	3	"My personal goal is to get my first job."
Character-related	3	"My goal is to be someone worthwhile...I mean helping someone or some sort of cause..."
Social	2	"My goal is to make time to hang out with friends more."
Academic Behavior	2	"Time Management Improvement...I want to learn to set a specific time for each achievement. I don't want to waste too much time or spend too little time on something that needs more attention."
Practical	1	"Getting a license by 18."

Personal Goal Exemplars

Students were instructed to create a personal goal from any area of their life, including health, social life, work, or any other domain that they felt was relevant to their lives at the time of the intervention. Students were also reminded to create their goal in a timeframe that did not exceed more than a year, as they would be better able to pursue a goal that could be attained by the end of the school year as opposed to one that would be attained later on in their lives.

Participant 107 created a personal goal that received a score of 15 on the SMART goal rubric. According to both raters, her goal was *specific, measurable, attainable, rationalized*, and was *time-bound*. Her writing during the personal goal setting exercise is as follows:

My Personal Goal: To lose weight, 20 pounds.

A Brief Description of that Goal: I have gained a lot of weight in the past year. So I want to lose about 20 pounds. I have breathing problems whenever I gain weight. Makes me self conscious about things too.

Motives for Pursuing Your Goal: I don't want to continue having breathing problems, I want to feel good about myself and the stuff I wear. I'm pursuing this goal because I think it's very important, health is everything. I'd be very frustrated if I didn't attain this goal. Eating / bad habits can give me a higher chance of getting diabetes since it runs in the family.

Impact of Achieving Your Goals: It would give me my confidence back, my family would also be proud of me. They also suffer from weight problems and want me to be healthy. If I attain this goal, people's perceptions of me would be positive and they'd know that I'm very determined with what I want for myself in my life. My own perceptions of myself would change to because right now I feel like I've lost my self confidence.

Creating Sub-Goals: Daily: Eat healthier breakfast with mom, work out at least 30 minutes a day even if just walking to school, salad before dinner. Weekly: Exercise other than walking about 3 times a week. Eat healthy on weekends. No junk food – bring own snacks to places. Everyday: Be determined. Have confidence. Positivity. "I/You can do it!"

Obstacles: What would interfere: Laziness, Sweet tooth, Big appetite. My mother can help support me and make sure that I attain this goal by walking with me and eating healthier meals especially at breakfast where I eat a lot of junk food.

Progress Monitoring: For each month I want to lose at least 3-8 pounds. By the time I turn 18 I want to be in the shape that I used to be. That gives me 6 months. I can weigh myself now and through the months. Keep track of what's happening to my weight on my calendar. I'll feel satisfied when I feel a difference in my body and see my weight decreasing each month.

Participant 107 set a very specific personal goal for herself: losing 20 pounds. This goal was measurable, because the student laid out sub-goals that would lead to losing weight, such as eating a better breakfast and exercising, and included how she would measure her progress toward her goals, such as writing her weight down on a calendar. Her goal was attainable, in that the student laid out a reasonable plan to attain weight loss, and her weight-loss plan of losing 20 pounds in six months is achievable if she executes her plan. She also rationalized her goal,

explaining that she wanted to lose weight to enhance her self-confidence and prevent diabetes, a disease that runs in her family. Finally, she has a time-bound plan for completing her goal in a specified timeframe of six months, including how she will measure her benchmarks while pursuing her goal.

Other treatment participants had a more difficult time articulating a clearly defined personal goal. Participant 108, for example, had one of the lowest rubric scores for creating personal goals, with an average rating of 8.5 out of 15 on the SMART goal rubric. He received scores of 2 and 3 in the *specific* sub-scale, scores of 1 in the *measurable* sub-scale, scores of 2 in the *attainable* and *rationalized* sub-scales, and scores of 1 in the *time-bound* sub-scale. The following is a transcript of his writing:

My Personal Goal: My goal is be someone worthwhile.

A Brief Description of that Goal: By doing this, I mean helping someone or some sort of cause that might be important to others. I would like to volunteer for this.

Motives for Pursuing Your Goal: My motives are helping someone or something. I think that it is important because everyone could use a little help once in a while. I would not feel anxious or worried only disappointed. I am pursuing this goal to help others and I do feel that this goal is important for me to be pursuing.

Impact of Achieving Your Goals: Pursuing this goal would perhaps make other people feel like I am a good / better person than they thought. Other aspects of my life wouldn't change unless I needed more community service hours and that went towards my college. This would affect my community and would affect my family by maybe inspiring them to do this as well. But I think over all it would just make me feel better and make others see that I am a good person who helps others.

Creating Sub-Goals: I would just need to spend about 5-9 hours a week finding somewhere that I could help at. Many places need help and I just need to find one I like. I plan on working towards my goal whenever I have free time. I basically have a very flexible goal so it does not need to be broken down so much into subgoals.

Obstacles: The only obstacles I could encounter would be not having any time to try and achieve my goal. My family would not put any obstacles in my way and I would in no way stop myself from achieving my goal. There is basically nothing that could stop me

from reaching my goal. I think the goal is important and will try to make it with all I have.

Progress Monitoring: I think that my bench marks would be weekly just to be sure that I actually did something for that week. Those benchmarks would be to check that I at least made an effort to contribute any time and skill towards reaching my goal.

This goal was rated as generally specific, with the participant indicating that they wanted to volunteer for some sort of cause. While one rater felt that this was specific enough to earn a score of 3, the other rater felt that the “cause” should have been identified, and thus thought the goal was more general and rated it a 2 on the specificity sub-scale. This goal was rated a 1 in the measurement sub-scale, because the sub-goals are not broken down in such a way that progress toward the goal could be measured accurately. Both raters gave this goal a score of 2 in attainability, as this goal seems reasonable, but a concrete plan to actualize this goal is absent from the writing prompt. Although the participant does provide a rationale for pursuing his goal of volunteering, this rationale is general and does not fully explain how attaining this goal aligns with significant others’ goals for the student. Finally, the goal did not appear time-bound, as the student does not have a definite timeframe in which begin his volunteer work, or a benchmarked plan in how to continue volunteering, given that the student mentions lack of time as a possible obstacle.

Ability to Set Academic Goals

The second goal treatment participants created during the intervention was academic in nature. Before students created their academic goal, they were reminded of the features of a SMART goal to help guide their reflection and writing. The overall composite SMART goal score had an intraclass correlation of $ICC = .95, p < .001$, indicating substantial agreement among raters. Agreement was strongest for the *rationalized* ($K = 1.00$) and *specific* ($K = 0.78$)

sub-scales, and lowest for the *time-bound* ($K = 0.62$) and *measurable* ($K = 0.68$) sub-scales. Inter-rater reliabilities for the five sub-scales are listed below in Table 17.

Table 17

Inter-rater Reliabilities for Scoring Academic Goal Writing (N=22)

Sub-Scale	Kappa	Significance	Level of Agreement
Specific	0.78	$p < 0.001$	Substantial
Measurable	0.68	$p < 0.001$	Substantial
Attainable	0.79	$p < 0.001$	Substantial
Rationale	1.00	$p < 0.001$	Perfect
Time-bound	0.62	$p < 0.001$	Substantial

The average score given for participants' academic goals on the rubric was 13.45 out of 15 ($SD = 1.04$), with a maximum score of 15 and a minimum score of 11. The means and standard deviations for the five SMART sub-scale categories are detailed below in Table 18. The average word count for the academic goal writing was 404.5 words ($SD = 103.35$), with no significant correlation existing between the word count and overall SMART goal score.

Table 18

Means and Standard Deviations for Academic Goal Scores Along SMART Rubric (N=22)

SMART Goal Sub-Scale	Mean	Standard Deviation
Specific	2.91	0.29
Measurable	2.77	0.57
Attainable	2.68	0.47
Rationale	2.82	0.39
Time-bound	2.25	0.69
SMART Goal Composite	13.45	1.04

Analysis of student writing indicated that participants were best able to create *specific* academic goals ($M = 2.91$), as well as provide a *rationale* for why they wished to pursue that goal ($M = 2.82$). Students, however, had more difficulty creating an academic goal that was *time-bound* ($M = 2.25$).

Academic Goal Exemplars

Participant 106 created an academic goal that received a score of 15 from both raters. His goal was deemed *specific*, *measurable*, *attainable*, *rationalized*, and was *time-bound* in a proximal frame, receiving a score of 3 on each sub-scale. Below is a transcript of his writing:

My Academic Goal: AP chemistry test.

A Brief Description of that Goal: Get a 4 or 5 on the AP chemistry test this May.

Motives for Pursuing Your Goal: I want to get these score because I want to learn about this subject and also get college credit on it. I would feel worried because I wouldn't get the credits and I wasted good money. I believe this goal is important because I like

chemistry and I want to have a career on it such as engineering. I am pursuing this goal for myself, so I can have a challenge and I can get a benefit from it and also learn about this subject.

Impact of Achieving Your Goals: Pursing this goal will change my perception of myself by me realizing that I can pass one of the hardest AP tests and that I am really smart if I work on it. It would change my other parts of my life by me having something good to put on college applications. It would also change my life by me trying to do other difficult AP classes that this school offers. My parents would also be proud of me for this because they know how hard it is for me.

Creating Sub-Goals: *study every day in the AP chem book and do practice problems *Join the study group that is working on AP chem *make flash cards of everything I find difficult or things I need to memorize to review each night *Do all the work my teacher tells me to do and review my tests after I get them back to understand mistakes.

Obstacles: Obstacles that I might face are other work from other classes. I will over come them by doing the work for chem first then do all the other work later. I might get lazy and not do my review. I can over come this by setting a period of my day just for chem like for study group. My parents might want me to do other things or me have to go places. I will tell them that I will have a part of my day for chem and to not bother me with anything during the duration of that time.

Progress Monitoring: I would like to achieve the goal by May. Evidence that I will use to show that I am making progress is that I will take practice tests that are in the book and see if I passed them or not. I can also see my grades from report cards. I will start to feel satisfied when I start to pass all the tests I do and finally when I get a 4-5 on the AP chem test.

This student had a goal that was a specific learning goal: to get a score of 4 or 5 on the AP Chemistry test. His goal was measurable, in that he would be able to track his progress by the scores he received on his in-class tests and by reviewing his work to find which concepts he needs to study. His goal is attainable, as he states that he can join a study club to help him, and that he appears aware of what he must do to pursue this goal, such as completing practice problems and creating flashcards. The participant also gives a rationale for completing these courses, such as he wants college credit for his exam, the course pertains to his future career, he feels it would enhance his academic self-perception, and earning these scores would make his

parents proud. Finally, his goal is bound in a set timeframe with benchmarks, which is proximal and can be completed within a school year.

The student that received one of the lowest scores on the academic goal rubric was Participant 122, who received an average composite SMART goal score of 11.5. This student received scores of 2 on the sub-scales of *specific*, *measurable*, *attainable*, scores of 2 and 3 for the *time-bound* sub-scale, and scores of 3 for the sub-scale of *rationalized*. Below is the transcript of her writing:

My Academic Goal: i want to be able to have absolutely no Fs and improve my grades to better grades next semester.

A Brief Description of that Goal: i have two Fs right now so i want to be able to raise those up and keep at least a C average and possibly a B average if i can. it will be hard but i can do it.

Motives for Pursuing Your Goal: the reason i'm trying this goal is because i want a better future for myself and if i continue to have Fs then i wont be able to get into a good college or university. this is important because if i don't pursue this, i wont be able to be anybody in the future, like a person who works with wild animals because i won't get into college or get a good job with these kinds of grades. i would feel anxious if i dont pursue this goal because this is something important to my future. i'm pursuing this goal because its important to me and my mom, who wants the best for me and thinks education is important.

Impact of Achieving Your Goals: this goal will impact me and everyone around me because i used to be a great student. i did all my work and got good grades but i started to slack off, so now i'm paying the price. if i achieve this goal i can change so much in my life because with the grades i have right now i cant go out anywhere and i don't have my phone because of it and i don't get much of what i want now a days.

Creating Sub-Goals: 1. pay attention in class so that i know how everything needs to be done. 2. get my work done and turned in. 3. find ways to make the class more interesting so that i pay attention. 4. create new ways to study and past my tests for a better grade. 5. block out anything that can distract me form doing my work.

Obstacles: one obstacles for me are not being able to try hard. i'm never trying enough and its always hurting my grades. so something i need to do is start trying and listening and putting forth more effort. an obstacle that my family put for is that they have me in many programs and i don't have enough time to get to my work and its tiring to have a lot on your mind and most of the time its not schoolwork on my mind, but the other things.

another obstacle is that i think of others things that i find "important" but they're not. like boys and boy problems, friends, and friend problems. just teenage issues.

Progress Monitoring: i want to be able to achieve this goal by second semester. i know that i'll be progressing by how i'm doing in my classes like i have no Fs in weeklies and report cards. i'll start to be satisfied when i get better grades and when i ask for something i'll be able to get it because i have good grades.

Participant 122 has a general academic goal: to raise her failing grades. It is not specific, however, because she does not have an exact target toward which she is aiming. Her goal is somewhat measurable, in that she would be able to see progress on her weekly reports and report cards. This student's goal appears somewhat attainable for her because it is likely that she could achieve her goal, but she fails to give a reasonable plan with strategies that convinces the raters that she is equipped to execute the plan. The goal Participant 122 sets out is also somewhat time-bound, in that she gives an endpoint to achieve her goals, but does not set out a specific plan in which she can benchmark her goals. The strongest score this participant received was in the sub-scale of rationalized because although the participant is repetitive, she lays out why getting better grades will help her future and links her goal with her mother's goal of education being important.

Summary for Finding 1

Overall, students set appropriate academic goals ($M = 13.45$) and personal goals ($M = 12.2$). For both types of goals, students were most capable of setting goals that were *specific*, *attainable*, and *rationalized*, and least capable in making those goals *measurable* and *time-bound*. Additionally, students were more inclined to create performance goals that laid out a definite target than learning goals that encompassed gaining knowledge about a particular subject or discipline. In summary, students could best create academic goals that were specific,

attainable, and rationalized, but needed more support in creating time-bound benchmarks that would make their goals more measurable.

Finding 2: Treatment Students Articulate Clearly Defined Goals Better than Control

Students

Three months after the goal setting intervention, both treatment and control groups wrote a short reflection about the goals they wished to pursue. The data from all students' writing allowed for comparison that could determine if any differences existed between groups in the way they articulated their goals. The prompt was open-ended, and asked students:

Take a moment to think about some of the goals you have for the future. Think about personal goals that you might have, as well as academic goals that you might have for yourself. What are some of the goals you have now? Why do you want to reach these goals, and how to you plan to reach them?

No other instructions or prompting was given to either group of participants. Students were then given approximately 10 minutes to respond to this prompt.

Responses to the prompt were scored on the SMART rubric developed for this study. Two raters scored all responses blindly to increase credibility of the ratings. The intraclass correlation between raters was $ICC = .99, p < .001$, indicating a substantial agreement between raters. Table 19 indicates the inter-rater reliability for the five sub-scales below.

Table 19

Inter-rater Reliabilities for Scoring Post-Intervention Goal Writing (N=44)

Sub-Scale	Kappa	Significance	Level of Agreement
Specific	0.87	$p < 0.001$	Almost perfect
Measurable	0.93	$p < 0.001$	Almost perfect
Attainable	0.84	$p < 0.001$	Almost perfect
Rationale	0.82	$p < 0.001$	Almost perfect
Time-bound	0.87	$p < 0.001$	Almost perfect

The average word count for the treatment group's goal reflections was 161 words, while the control group's word count was 110 words. A significant difference existed between treatment and control groups on the number of words written for the prompt, $t(42) = 2.56, p < .05$, with treatment students writing more than control students on the goal reflection.

Additionally, the treatment group had an average SMART goal score of 11.8 out of 15 ($SD = 2.77$) on their goal reflections, with a median of 13 and a range from 6 to 15. The control group scored an average of 8.02 out of 15 ($SD = 1.95$) on their goal writing, with a median of 8 and a range of 5.5 to 12. The mean sub-scores of both the treatment and control group can be found in Table 20. On average, the treatment group scored significantly higher than the control group on the three-month post-intervention writing task, $t(42) = 5.18, p < .001$, with every sub-scale indicating a significant difference between groups (Table 21). A higher word count was related to a higher overall score ($r = .48, p = .001$), indicating that the more students wrote in their response to the prompt, the higher score they received on the SMART rubric.

Table 20

Mean Differences for Treatment and Control Participants on SMART Goal Rubric (N=44)

Sub-Scale	Treatment Mean (SD)	Control Mean (SD)	Mean Difference
Specific	2.75 (.54)	2.18 (.87)	.57
Measurable	2.14 (.91)	1.64 (.72)	.50
Attainable	2.11 (.87)	1.25 (.58)	.86
Rationalized	2.66 (.69)	1.64 (.69)	1.02
Time-bound	2.11 (.82)	1.27 (.62)	.84
SMART Composite	11.8 (2.77)	8.02 (1.95)	3.78

Table 21

T-tests for Differences Between Groups on SMART Goal Rubric (N=44)

Sub-Scale	<i>t</i>	<i>df</i>
Specific	2.63*	42
Measurable	2.02*	42
Attainable	3.93**	42
Rationalized	5.07**	42
Time-bound	3.87**	42
SMART Composite	5.18**	42

† $p \leq .10$, * $p < .05$, ** $p < .01$

Case Comparisons: Treatment Versus Control Exemplars

As previously stated, the median scores for the treatment and control group were 13 and 8, respectively. A case comparison is presented here to show the difference in goal writing done by each group, with exemplars displayed side-by-side to show the difference between median responses to the short goal-reflection task.

Treatment Group
Median Sample Response
Participant 108
SMART Composite Score 13/15

My goal that I'm work on is get a 3.0 gpa this semester. I am pretty close to that now and I think I can do it this semester by watching my 5week grades. I plan on reaching this goal by studying hard in school and also taking more AP classes. If I make this goal I can widen my opportunities of getting into a good college which will prepare me for learning things that will in turn allow me to achieve success in my career life. I also plan to keep striving for this goal and never give up hope so that I will always have ambition to be better. Thinking about being able to reach my goals has made me strive towards being better student and has allowed me to get off of academic probation this semester which was great and inspired me to work harder. An educational catch of sorts.

Control Group
Median Sample Response
Participant 212
SMART Composite Score 8/15

Some goals I have come up with are personal, but mostly academic. My personal goal, such as doing well in school to make my family proud, relate directly to my academic goals. I have to set a goal to get straight A's this semester and all through next year, including in my AP classes. However, this semester I have already started wrong, because of quizzes and tests and such. Therefore, I have made my goal to at least get a B or even a C in my AP chemistry class, and maybe another B in another class. However, I will reach for the highest I can and see where it gets me.

Participant 108 from the treatment group received scores of three on the sub-scales of specific, measurable, and rationalized, and scores of two on the sub-scales of attainable and time-bound. His goal of obtaining a 3.0 grade point average is performance-oriented and very specific. His goal is measurable, in that he indicates he will check his five-week report card

grades to see progress toward his goal. He also rationalizes why he wants to pursue this goal: to go to a better college and have a better future. His goal seems attainable, but he has not given a specific plan that he will use to work toward his goal. Similarly, although he sets the end point of his goal at the end of the semester, he does not set specific benchmarks for a plan to monitor his progress toward his goal. This student's SMART composite score of 13 demonstrates that this student has set an acceptable goal that seems reasonable to pursue and is an exemplar of a median student's response from the treatment group.

Participant 212 from the control group received scores of one on the sub-scales of specific, attainable, and rationalized, scores of two for being time-bound, and scores of three for being measurable. Her goal is not specific, because she initially states that she wants straight A's, but then modifies her goal to possibly B's and C's, depending on the class. Her goal does not appear attainable because she has not provided any indication of having a plan toward achieving her goal. Additionally, the student does not provide a clear rationale for why she is pursuing this goal. She does, however, provide a general timeframe in which to accomplish her goals, which are at the close of the current semester. Her goals are measurable, as well, because she is clearly tracking her progress by monitoring her grades. Participant 212's composite score of 8 demonstrates a typical response from the control group.

Overall, the data indicated that treatment and control groups composite scores were skewed to opposite ends of the composite score rubric, with treatment students' scores skewing toward the higher end of the scale and control students' scores skewing to the lower end of the scale. To show extremes in students' writing by group, an extreme case comparison is presented to show the extreme differences in students' writing from each group, with the extreme (i.e., high or low) selected to demonstrate the skewness of the groups.

*Treatment Group
Extreme Sample Response
Participant 120
SMART Composite Score 15/15*

My main academic goal I have is that I want to do better in school and get all B's or better on my next report card. I want to do better in school because it'll let me hang out with friends & family more. It will also help my GPA & my credits so I won't be held back or be a junior with sophomore credits. I plan to do better by doing my work more regularly & studying for tests.

I want to get B's or better because I want to prove to others that I can do it. But mostly I want to achieve this goal because I know I can do it, and before I just wasn't taking school very seriously. Now that I'm serious I have a checklist of things to do and I'm try to check things off every day so that I don't get behind in my classes. Overall, since I last went to the UCLA Project, I've been reflecting over my goals & I want to do. I've started planning things out more and doing my homework as well as classwork more regularly. I've started taking my classes more seriously. I've planned out my junior year to fit the classes I need & the classes I need to take over. Thanks to the Project, I'm more capable of planning things & executing them as well. I am also able to motivate myself to aim for what I want and can achieve.

*Control Group
Extreme Sample Response
Participant 213
SMART Composite Score 6/15*

I am not sure on what profession I want in the future, but I do dream to be a great leader. I plan to give back to the less fortunate, create support groups for girls / children without their fathers to remind them that they can still make it in life. I also plan to become a public speaker on social issues that aren't payed close attention to. I would love to write award winning books, and I would start off with an autobiography, portraying how it took struggling in my life to succeed, which will influence girls who go through problems I have endured, and lift their spirits. I plan to reach these goals by going to college.

Participant 120 from the treatment group received scores of three on each sub-scale of the SMART rubric. Her goal is specific: she wants all B's or higher on her next report card. Her goal is also measurable, in that she can see progress that she is making toward her goal by seeing

her report card grades and ensuring that her checklists are being accomplished. Her goal also appears attainable, as she has put a realistic plan into action to ensure that she improves her study habits, and additionally is not aiming for unreasonable perfection, such as straight A's. This student clearly rationalizes her goal, detailing that attaining getting these grades are important because she knows that she can better reach her potential and prove to herself and others that she can attain this goal. Finally, her goal is clearly time-bound because she cites the endpoint of goal attainment at the end of the next semester and has detailed daily habits that will help her view progress toward her goal. Participant 120, in a short response, has detailed a clearly articulated academic goal.

Conversely, participant 213 was not able to clearly articulate a goal for herself. She received scores of one for the four sub-scales of specific, measurable, attainable, and time-bound, and received a score of two for her goal rationale. Her goal lacked specificity and did not target one discreet area. Her goal was not measurable, because she failed to articulate any benchmarks that she could measure during goal pursuit. Her goal does suggest that it is attainable, because being a "great leader" and an award-winning book author is not reasonable, given no plan to achieve this type of goal. This participant does provide a rationale for attaining her goal, but it is general in nature. Finally, the goal is not time-bound as there are no start, middle, or ending benchmarks that the rater could identify.

Summary for Finding 2

Analysis of students' goal writing three-months post-intervention indicated that students in the treatment group received significantly higher scores on their goal writing than control students at three-months post-intervention, $t(42) = 5.18, p < .001$. As displayed in Table 17, the

treatment group scored significantly higher than the control group in every sub-scale of the SMART rubric three-months post-intervention. The greatest differences between groups were found for the *rationalized* (1.02 units) and *attainable* sub-scales (.86 units). Students in the treatment group were more likely to elaborate on their reasons for pursuing their goal (e.g., “I want to be the first person in my family to go to college and achieve the career I want”) than students in the control group (e.g., “I want to be happy”). Treatment students also set goals that were more attainable than the control students (e.g., “My goal is to get my GPA back up to what it used to be, about a 3.0 at the end of this semester” versus “My goals right now is to just graduate and earn my ranks in the music industry...to get a hit song this year and a couple nominations for awards”). Overall, the treatment students were more able to clearly articulate specific, measurable, attainable, rationalized, and time-bound goals than their control group counterparts when given a short, open-ended writing prompt in which to explain their current goals.

Finding 3: Gifted Underachievers Want to Improve Their Academic Performance

Overwhelmingly throughout the intervention exercise, treatment students stated that they were unsatisfied with their current academic performance and indicated that they wanted to improve their academic standing. This pattern was also observable in both the treatment and control groups’ three-month post-intervention goal writing responses. The gifted underachievers in this sample indicated throughout the reflective prompts that: 1) they observed a discrepancy between their performance and potential, 2) they knew that college and career were predicated upon improved academic achievement, and 3) they felt they needed to do better academically not only for themselves, but also for their families.

Noting a Discrepancy Between Performance and Potential

The gifted underachievers in this study consistently noted that they wanted to improve their academic performance. In particular, treatment students noted a discrepancy between their level of performance and their level of potential in school during their Section 1 and Section 2 intervention writing on possible futures. Although this project never mentioned the word “underachiever,” students sensed that they were not doing as well as they could in their academics and noticed a change in their level of performance as they progressed through their levels of schooling. Participant 107 wrote about this sentiment, saying:

I would choose to pay attention/study more. I’m very smart, my teachers have always told me that since elementary. But at times I don’t push myself enough to pay attention and learn. If I could go back to middle school now, I would pay more attention and study to know more things.

Participant 105 echoed this feeling of increasing underachievement, stating,

If I could do anything better I think I would have to say to do better in school. I used to be a straight A student in elementary school, and once I got to middle school, the work just got harder and I didn’t do as well. I still got good passing grades. But what really hit me was high school...

Some students wrote about the discrepancy between their performance and potential more generally, making statements such as Participant 113:

I want to improve the quality of work I do for school. I don’t think that I am doing the best I can for school, so that could possibly be holding me back. If I tried a little harder to focus more on school than on other things like my phone or even the internet it would benefit myself by boosting grades (hopefully).

Treatment students also noted their desire to increase their academic performance to a higher level in their goal setting activities during the intervention. When asked to create and elaborate on their academic goals in Section 4, students made statements such as, “I want to get an ‘A’ in math because I know I could do better” (Project 114) and:

last year, my average was at least a B and sometimes a C. this year, I'm aiming for A's. although I am a sophomore this year, I realized that I messed up my freshman year by not doing my best and I really want to fix it. (Project 120)

They gave reasons for pursuing their goal that indicated a difference in how they are currently performing and how they know they could perform, making statements such as, "my reasons for pursuing this goal is to show myself that I am capable of attaining high scores once again"

(Participant 112), "I am pursuing this goal because I wasn't pleased with the grades I got in the first five weeks of school. None of my grades should be as low as they are right now"

(Participant 113), and "I want higher than a 3.0 because I know I can do it" (Participant 117).

Thus, multiple steps of the goal setting process included statements that indicated students wanted to reverse their underachievement.

Finally, both treatment and control students in this study indicated an awareness of academic underachievement in their three-month post-intervention reflections. When students were asked to write briefly about their goals on an open-ended prompt, 20 out of 22 treatment students included academic goals in their writing, and 14 out of 22 control group students wrote about academic goals in their reflections. Excerpts from students' responses are as follows:

Participant 122: Some of the Academic goals I have right now are getting my grades up. especially in English and history because they're very poor. I have Fs in both of these and that needs to change for this year to at least get Cs. I plan on doing my work for English and history and actually trying. I plan to get a tutor because I can't get anymore Fs. That's something I decided because I know im better than this.

Participant 101: The goals that I have now is to get at least a C in all my classes this semester. This last semester I improved my grades a lot by staying focused on my goal but I still can do much better than I am doing now.

Participant 110: Most of my goals as of now are about doing well in school. I've been slacking in high school but I'm really trying to change that, mostly by trying to study with friends after school instead of messing around at home. Doing well now will let me have choices later in life so I need to stay focused on getting the grades I should be getting this year.

Participant 115: Academically, I want to finish this semester with only A's and B's. Also, I want to keep that up and continue that way in school. I also really want to get straight A's before I graduate because I have not done so since I entered middle school and I know I can do it.

Participant 206: I am in the 10th grade this year, and I'm already stressing about college. Academically one of my goals is to be a better student because throughout my life school was always easy for me without even trying, and now that I'm actually getting challenged with my AP classes my goal is to be able to learn more and do better than I've been doing.

Participant 221: One of my goals right now is to try to pass 10th grade with grades higher than last semester ideally all As. I want to do this because I think it's important to that I try to motivate myself to work harder and push myself more in school than I've been doing.

Academic Improvement as a Means to a Better Future

Treatment students additionally expressed an understanding that doing well in school would help them advance in their future, often linking increased academic performance to improved college prospects. When creating their goals in the intervention, students cited motives such as, "I believe this goal is important, because finishing off high school strong looks very good to college/universities and if I didn't finish off with at least a 3.5, I would not be happy" (Participant 125), and "the reason I'm trying this goal is because I want a better future for myself and if I continue to have Fs then I won't be able to get into a good college or university" (Participant 122). Participant 117 noted that better academic grades would improve college access, stating, "having good grades could open doors to better places. It can give me a better access to colleges." Other students noted that better grades would help them finance college, making statements such as, "I don't want to go to college in California so it is important for me to get good grades so that I can get a scholarship and actually afford a good college" (Participant 116).

Several students did note, however, that although they understood better grades would increase their chances of getting to college, they were confused about the college-going process in general. When Participant 102 wrote about what he would like to learn more about in the next six months to a year, he stated,

in the next six months to a year I would like to learn more about college. I still don't get how the whole system works since they haven't really explained it very well to me here at school. Before I make any decisions, I want to make sure I am well informed.

Other students noted that they would like to learn “how college works, the scholarships, financial aid...” (Participant 107) as well as “what options there are after and during high school for students that can't pay for a 4-year study at a well-known university” (Participant 110).

Participant 125 stated that she wanted “to get more informed of my college choices soon...I never thought about that before, but I realize it's the most important choice in your life.”

Students thus indicated that they wanted better grades to go to college, but were not quite sure of how to access or afford higher education.

Participants also correlated high academic performance with better opportunities for pursuing their chosen career. In reflecting on her motives to get better grades, Participant 109 stated, “My reasons for persuing this goal are having a really good carreer.” Participant 114 stated, “I want to get an ‘A’ in math because math is crucial in the ‘real world’, and since I want to get a job as a math teacher, this is crucial.” The participants also noted that doing well in school would help them get the education necessary to obtain their preferred career, making statements such as, “This goal will help me get into a good college which will help me open up my restaurant” (Participant 101) and “If I accomplish this goal then this can lead me to good grades to qualify for scholarships to get into a good university and start the path right on my

career” (Participant 111). Overall, students seemed to understand that improved high school performance would positively impact their college and career choices later in life.

Academic Improvement as a Means to Make Family Proud

Finally, students consistently expressed that they needed to improve their academic performance not only for themselves, but also for their families. In writing about her motives to increase her grade point average, participant 105 stated, “I want my report cards to look good, decent and presentable to my parents.” Participant 117 reflected in for his goal motives that “im pursuing this goal because its important for me and my family. my mother is the one who most wants me to pick up my grades, and i want to make her proud.” As these examples demonstrate, the majority of participants who mentioned family referred to their parents, most often referencing their mothers.

In discussing the impact of achieving their goals, participants wrote about how getting better grades would help family members see them as they saw themselves. Participant 120 wrote, “pursuing and achieving this goal would change my family’s perspective of me, because now they think of me as just some slacker. i’d prove to them, as well as myself, that i can achieve greatness too.” Likewise, Participant 112 stated, “I think that attaining this goal will help show my mother and father that I have not just given up and that I do care, as I always have, about my education.” One participant expressed that she believes her family’s love is predicated upon her success, and wrote, “If I achieve this goal my father might actually love me. I will be viewed as ‘smart’ to him, but I already know I’m smart, I just don’t always show it.” Thus, students indicated that it was important to them that family recognized that they were smart and capable students, which is how they saw themselves.

Summary for Finding 3

Participants in this study indicated that they were aware that they were “underachievers.” They wrote about wanting to do better, stating that they believed they could do so by working harder. They also tied their current academic performance to their ability to get into college and have a satisfying career. Finally, students expressed the need for parental approval, which they believed they could garner if they improved their academic performance in high school.

Finding 4: Time Management Is the Largest Impediment to Academic Success

During the intervention writing, the treatment group indicated that they were not meeting their academic potential. In their writing about possible futures in Sections 1 and 2, as well as their goal-writing in Sections 3 and 4, many students attributed their lack of academic success to one factor: time management.

Students’ reflected that time management was a problem for them from the very first prompt of the project. Prompt 1 asked students, “If you could only choose one thing you could do better, what would it be and why?” Ten out of 22 students indicated time management was the one thing they wished they could improve. The following excerpts of responses from Prompt 1 indicate the range of responses concerning time management:

Participant 102: If I could do anything better i would choose to improve my habit of procrastinating. i get really lazy when it comes to studying before tests and also with doing homework. It's just a habit that i cannot get rid of. i know that if i were to able to get rid of this habit, then i would do a lot better in school and my grades would go up. i also know that test taking would be easier for me.

Participant 104: If I could do anything better it would be my time managing skills. I would want to improve on setting my desired accomplishments and set dates. I would really improve in school and honestly have more time to myself. I wouldn't procrastinate and I would be able to go out more because I would have more free time due to better organization.

Participant 111: If I could do anything better it would be to be able to manage my time and to not procrastinate anymore. the reason being that I dont get my work done like i should.

Participant 115: One thing I would choose to do better is to manage my time more wisely...Once I get home I usually watch TV or play video games, etc., relax, then do hw, play, work-out, take a shower but sometimes things don't work out that way and I end up not getting to everything.

Treatment participants continued to mention time management as being a habit they would like to improve in Prompt 3. In this prompt, 21 out of 22 participants cited school habits as those that they most wanted to improve, with time management being cited in 11 responses.

Participant 103 noted,

Habits I would love to improve on is getting my projects and homework done on time. I am a big time procrastinator and I really lag it. I tend to always do my schoolwork the day before it is due. It is crazy how I get them done but still I would love to change this habit.

Participant 125 echoed this sentiment, writing,

I would like to improve several of my habits, one of the worst being procrastination. I procrastinate sometimes, because I've gotten bad grades before, and I know I can get away with it. But, I would only stop procrastinating for myself, because I want to do better.

Participant 123 also stated that his lack of time management affects his grades, stating,

I would like to have more willpower so that i can do my homework a lot more and better. i can't force myself to work and i wish i wasn't so lazy so that i wouldn't always procrastinate and i could actually work and get better grades. and if i do my work more often, then i could learn more because i would understand the concepts that are being taught to me a lot faster.

The word “procrastination” was mentioned 13 times in responses throughout this Prompt 3 alone, indicating the frequency that students highlighted this time management issue.

In Sections 3 and 4, three treatment participants set goals explicitly related to time management. For his personal goal, Participant 104 set the goal “Time Management Improvement.” He indicates “the impact would be tremendous because I can honestly say that I

am horrible at managing my time.” Participant 102 set his academic goal as “to stop procrastinating and actually do my assignment when they are due.” He writes that he wants to achieve this goal “because my grades are now somewhat low because I procrastinate a lot...I feel that if I kick this habit, my grades will go up dramatically.” Participant 111 also created her academic goal around time management, stating, “My academic goal is to not procrastinate and to manage my time.” She expressed that the impact of managing her time better “can lead me to good grades to qualify for scholarships to get into a good university and start the path toward my career.” Setting entire goals around time management indicates that students perceive that the lack of time management has a significant effect on their overall achievement.

Although most students did not create a goal specifically around time management, many participants mentioned time management in one of the steps of the goal setting process. For her goal of “improving my grades to Bs”, Participant 116 lists the following in her sub-goals: “1. Stop procrastinating! 2. Turn in all of my work on time,” indicating that the student believes managing her time more wisely would lead to better academic performance. Likewise, Participant 103, for his goal of doing better on tests, includes the following in his sub-goals: “*Study a week before the test *Do not procrastinate whatsoever.” Participant 107 indicates that one of her obstacles for meeting her goal of going to college is being “behind in work missing assignments, laziness, procrastination!” For Participant 109’s goal of improving his grade point average to a 3.5, he states “Some obstacles I can face in achieving my goal are that I might not be able to do my homework on time because I procrastinate.” Similarly, Participant 118’s goal of improving her grade point average to 3.5 might be hindered because “an obstacle I have is my procrastination. It always gets the better of me and I end up messing up because of

it.” Thus, students throughout the goal setting intervention expressed that procrastination was a substantial obstacle to academic achievement.

Students who created goals around time management expressed several solutions to improving their time management skills. Participant 104 created the following sub-goals to improve his time management:

I would start with writing things down in my agenda. My school agenda has a daily format. If I stick to my daily goals, I would learn to stay on point with my daily work. Sooner or later, I would get used to daily work and move onto a next step, weekly goals. These goals would be more important or bigger than my daily goals and would require my whole week.

Participant 111 additionally includes schedules as part of his sub-goals:

1. Set up a schedule 2. Find a nice quiet area where I have no distractions 3. Attend after-school tutoring 4. Start homework the day its assigned even if i have a week to complete it.

Likewise, Participant 102’s sub-goals include schedules and tutoring for eliminating procrastination, stating:

1. to push myself to work harder. 2. to start doing my homework at least a day before it is due. 3. to study more on tests. 4. to organize myself a lot better with schedules 5. maybe go to tutoring when i need it and take advantage of help.

Keeping agendas or routines was the most-cited solution to overcoming time management issues from students during their writing, followed by finding a more appropriate place to study to keep them concentrated on their work.

Summary for Finding 4

Throughout the goal setting intervention, students expressed that time management skills were the biggest impediment to academic success. They expressed frustration (e.g., “i hate it so much I just want to slap it out of my head and just do it”) at their inability to manage their time

correctly, and several students set a complete goal around this academic behavior. Most students, however, indicated that procrastination, or the lack of time management, was a significant obstacle in their path to obtaining academic success. The main solutions students noted for improving their time management skills included setting schedules, studying in a quiet location, and forming study groups with friends.

CHAPTER FIVE

DISCUSSION

Introduction

This study employed an experimental design to study the effect of a goal setting intervention on high school gifted underachievers' academic attitudes and achievement. Quantitative evidence from this study indicates that a goal setting intervention positively impacted academic achievement and self-perceptions in a sample of high school gifted underachievers. Furthermore, this study sought to determine how well high school gifted underachievers could articulate clearly defined personal goals, as well as reveal patterns in students' writing that detailed perceptions of their achievement. Qualitative data from the treatment group demonstrate that students enjoyed the process of reflecting on their desired futures and creating goals to realize those futures. Notably, students in this sample communicated that they knew they were underachieving and cited the lack of time management as being their biggest impediment to success. Overall, participants conveyed that they wanted to improve their level of academic performance, which they believed would help them achieve a desirable future.

In this final chapter, I discuss the highlights of this study's findings and connect those findings to previous research. Next, I consider the limitations my study posed and the effect those limitations might have had on the primary findings. I then explore opportunities for future research, and share what implications this study has for policy-makers in education. Recommendations are then provided to schools based on the results from this study. Finally, I close this chapter with a reflection on this study's importance to educational researchers and

practitioners, who have the ability to make the changes needed to reverse underachievement in the gifted population.

Highlights from the Primary Findings

Treatment Students Experienced Increased Academic Self-perceptions and Achievement

Quantitative data indicated that treatment students reported higher academic self-perceptions between pre- and post-intervention on a measure of academic attitudes. This marginally significant difference occurred between pre-intervention and one-day post-intervention. Academic self-perceptions was indeed the only academic attitude that significantly changed for either group for any time point; motivation/self-regulation, goal valuation, attitudes towards school and teachers, future orientation, and theory of intelligence showed no significant interaction effects of time and group.

Previous research has noted a relationship between academic self-perceptions and achievement. Social-cognitive theory hypothesizes that academic self-efficacy is a key factor in achievement, with academic self-perceptions influencing and being influenced by actual achievement. For example, students' levels of academic self-efficacy affect their choice of academic tasks as well as their levels of effort and persistence while engaged in academic work (Schunk, 1995). Conversely, Schunk (2003) notes that students' behaviors can affect their academic self-efficacy. Students note goal progress as they persist in academic work and successfully pursuing goals reaffirms that they have the capacity to achieve, which in turn positively impacts self-efficacy during learning. Similarly, Marsh and Martin (2011) found that academic self-concept both directly and indirectly influences subsequent achievement. They

proposed a reciprocal effects model of academic self-concept and achievement that mutually reinforce one another, with increases in one factor leading to increases in the other.

Indeed, findings from this study confirmed Martin and Marsh's (2011) reciprocal effects model of academic self-concept and achievement. Treatment students reported significantly higher academic self-perceptions immediately post-intervention and obtained a significantly higher change in grade point average than control students in this study, with the average increase in grade point units being .23. Meanwhile, students in the control group declined by an average of .06 grade points in the semester post-intervention. These results were similar to the academic effects experienced by undergraduate underachievers in a previous empirical study upon which this project is based, whereby treatment students who received a similar intervention increased in academic achievement and persistence (Morisano et al., 2010). This study's findings also concur with previous qualitative research, where chronically underachieving gifted high school students were able to experience increased academic gains by developing personally motivating goals that included achievement targets (Emerick, 1992).

The increase in academic self-perceptions that treatment students immediately experienced post-intervention could have stemmed from the fact that students designed a plan to address their academic difficulties. Previous research indicates that instructing students to set their own academic goals can improve self-image (Emerick, 1992), which could then lead to a positive feedback loop of increased achievement. Indeed, academic self-concept has been found to be a significant predictor for academic achievement. Lyon (1993) found that academic self-concept accounted for approximately one-third of the variance in achievement between students. Setting an academic goal, reflecting on why the goal is important, and creating a plan to meet that goal might have spurred students' academic perceptions of themselves after the intervention.

These perceptions may then have contributed to an increase in goal-related academic behaviors, leading to an overall increase in actual achievement in treatment students.

Students' Perceptions of their Increase in Academic Achievement

While all variables in this study could not be accounted for and claims of causality would be misleading, several treatment students attributed their academic achievement increase to the goal setting project. Furthermore, these students appeared to have more confidence in their ability to execute achievement-oriented work habits, such as future planning. Participant 104 wrote in his three-month post-intervention goal writing response,

This year, thanks to this project, I have raised my grades and look a lot better compared to 9th and 10th grade. I can still do better... This project has helped me set my goals and some I have accomplished, others I have not. I can manage my time better now. I do my work as soon as possible, and that gives me more points and lets me ask the teacher when I don't understand something in advance instead of the last minute.

Participant 108 likewise stated, "Thinking about being able to reach my goals has made me strive towards being better student and has allowed me to get off of academic probation this semester which was great and inspired me to work harder." Participant 116 shared, "This program has made me think of what I should do to do better in school and I hope it will help me in the future." Finally, Participant 120 wrote how she believed setting a goal for increasing her grade point average impacted her achievement:

Overall, since I last went to the UCLA Project, I've been reflecting over my goals & I want to do. I've started planning things out more and doing my homework as well as classwork more regularly. I've started taking my classes more seriously. I've planned out my junior year to fit the classes I need & the classes I need to take over. Thanks to the Project, I'm more capable of planning things & executing them as well. I am also able to motivate myself to aim for what I want and can achieve.

In their three-month post-intervention reflections, students thus indicated that this study's goal setting project was instrumental in their ability to raise their grades. They additionally

credited the project with better academic work habits, such as finishing work promptly and planning future schedules. Although the academic attitudes of motivation/self-regulation did not increase significantly on survey measures, students nevertheless reported increased motivation to achieve higher grades in their goal reflections. This self-reported motivation was perhaps additionally demonstrated through the significantly higher grade point averages the treatment group experienced, rather than the survey instrument employed.

Students' Perceptions of Their Underachievement

Qualitative data gathered through treatment students' writing during the intervention gave insight into high school gifted underachievers' perceptions of their underachievement. Throughout the duration of the intervention, students frequently mentioned that they wanted to perform better academically, stating believed that they could improve if they worked hard enough. Almost all participants mentioned that they wanted to attend college and shared that they believed academic success in high school was necessary to accomplish this future goal. Accordingly, a majority of students created an explicit goal around raising their grade point average, explaining in their rationale that this was a necessary step in their larger goal of attending a university. Students, then, appeared to be aware that they were not performing as well as they should academically, but nevertheless desired higher academic achievement and wanted to persist in their education.

One surprising finding emerged from students' discussions of their achievement. Although students frequently wrote about their perceptions of their underachievement, they failed to discuss their giftedness at any point during the intervention. This was an unexpected finding, as students seemed to embrace the label "underachievers" as opposed to "gifted

underachievers.” Several participants did write comments such as, “I know I’m smart,” but no student invoked the gifted label when talking about themselves as students. I found this lack of self-reported gifted identification unexpected as I work in the Urban Union District and know that gifted students are frequently informed of their status when taking intellectual exams, applying to schools, and throughout the secondary clustering process. Students in this study were either not aware of their gifted status, or their poor academic performance impeded them from considering themselves gifted. If the latter were indeed true, the students in this study might have perceived that they were no longer gifted due to their poor academic performance. This phenomena has been described by Atkinson (1974), who proposed that students might feel as if they could “lose their giftedness” in a cycle of decreased academic motivation and achievement.

A goal setting intervention, then, was uniquely warranted because of its significant positive effect on academic self-perceptions concurrent with increased academic achievement. The increased academic self-perceptions students reported one-day post-intervention might have spurred students to be more confident in their academic abilities, which in turn led to behaviors that increased their academic achievement. If gifted underachieving students create a personal, motivating plan to achieve higher grades, their goal pursuit would help in amplifying the positive feedback loop between academic self-perceptions and achievement. The resulting benefits of this process could help students realize that they are indeed gifted, as well as set them on a path to maximize their academic potential.

Time Management Was Cited as the Biggest Obstacle to Higher Academic Achievement

In their writing, treatment students attributed their academic underachievement to their inability to effectively manage their time. Several students set entire goals around time management, as they seemed to understand that a connection existed between their poor time management skills and their lack of academic success. While some students had reasonable solutions to this problem, such as keeping agendas and checklists, the majority of students did not have a viable plan to reverse their procrastination tendencies. They thus understood the problem time management caused, but could not self-generate solutions that would help them mitigate this issue.

This finding concurs with research that sought to differentiate gifted high achievers from underachievers. McCoach and Siegle (2003) found that on a measure of academic attitudes, the factors of motivation and self-regulation could accurately classify a gifted student as underachieving. Self-regulatory behaviors, which can be a failure to execute appropriate work habits such as time management, have also been cited as a key factor in gifted underachievement (Reis & McCoach, 2000). Furthermore, current research in gifted underachievement has attempted to enhance time management skills to increase academic achievement in the target population. Stoeger and Ziegler (2005), for example, were successful in implementing an existing time management curriculum with a sample of elementary gifted underachievers to enhance self-regulatory work behaviors. Treatment students in this empirical study experienced significantly increased levels of academic self-efficacy and demonstrated enhanced ability to manage their time and work habits. Academic achievement also increased slightly, with the researchers attributing the lack of significance for this outcome to the small sample size employed.

Throughout the intervention, the gifted underachievers in this study reported that their lack of time management impeded their ability to achieve higher academically. As such, it might be valuable to explore the use of a time management curriculum similar to the one employed by Stoegler and Ziegler (2005) with gifted underachievers, concurrent with goal setting, to help students meet their desired academic outcomes. Giving students the tools necessary to increase their self-regulatory behaviors, such as appropriate time management skills, might be beneficial to help enhance academic attitudes and achievement in this vulnerable student population.

Limitations of the Study

This study presented several limitations that deserve consideration. The first limitation involves the sample of participants who volunteered to participate in this project. Due to the small number of participants that hailed from one urban high school, the results of the current study would be difficult to generalize to the broader population of gifted underachievers.

Furthermore, the small sample in this study, even though randomly assigned, yielded treatment and control groups that appeared to be demographically different. Ethnic representation appeared to vary among the groups, and the treatment group had notably younger students on average than the control group. The differences in these groups could have introduced unintended covariates that could have confounded the results of the study.

Additionally, the sample chosen for this study came from a large, urban, comprehensive high school that is majority Latino. The ethnic representation of the gifted underachievers in this study was thus skewed toward Latino students, which does reflect the findings from other research that gifted underachievers are disproportionately from a minority background (Reis et al., 1995; Renzulli & Park, 2000, 2002). It is important to note, however, that this intervention

employed a goal setting project to reverse underachievement that relied heavily on language. Indeed, Morisano and colleagues (2010) found in their original intervention that native language was related to the degree of academic increase experienced by the participants, with native English speakers experiencing a greater achievement gain than non-native English speakers. This suggests that language may have been a variable in student's ability to fully benefit from the study's intervention, as students might have come from households whose primary language was not English.

Another limitation this study presents concerns the definition of "gifted underachievers" employed in this study. Research has no standardized definition of what qualifies a gifted student to be considered underachieving (Dowdall & Colangelo, 1982; Colangelo & Assouline, 2000). Some researchers indicate that a grade point average below 3.35 could classify a student as underachieving, with extreme underachievement being marked at or below 2.75 (Peterson & Colangelo, 1996), but definitions vary from study to study (Reis & McCoach, 2000). The present study considered any gifted student as an underachiever if his or her grade point average was at or below 3.0, as this threshold would limit students' ability to enter the University of California system. Although the degree of underachievement was considered when students were randomly assigned, it could be argued that participants in this study with a grade point average of 3.0 might be different than students with a grade point average of 0.5. It is possible that students who were extreme underachievers (e.g., having a grade point average of 0.5) might have needed a more detailed goal setting curriculum than marginal underachievers (e.g., having a grade point average of 2.75). This study made no accommodations, other than blocking during random assignment, however, to take into account the degree of underachievement in participants during the scope of the intervention.

The lack of feedback to participants on their goal progress is an additional limitation of this study. Although the original intervention that this study replicates was computer-based and required no direction from an in-person facilitator (Morisano et al., 2010), the participants in this study were younger and perhaps needed more guidance and feedback during the process. The act of setting personal goals is presumed to act as “a binding agreement with one’s self” (Morisano & Shore, 2010, p. 253) that can create a sense of accountability within the goal-setter’s conscious. Perhaps high school students might need more external accountability to fully realize their goals. Interfacing with a teacher or counselor on goal progress over the course of a semester might be able to provide the student with more support and accountability to help them set and maintain progress toward their own personal goals.

A final limitation of this study was its brevity. The intervention in this study occurred in two sessions over the course of two weeks in an after-school format. The intervention schedule was altered from its original schedule of four sessions over four weeks due to New City High’s academic schedule. Most New City High students have a seventh class period that concludes well beyond a typical school day. Many students had great difficulty attending the program after-school due to their seventh period dismissal and subsequent work schedules. This scheduling issue limited the number of participants that could volunteer to participate and the number of sessions that could be offered in alternate scheduling blocks. The project could perhaps be improved upon by building the goal setting project into the regular school day, whereby all interested students would have the opportunity to set, work toward, and monitor goals on a consistent basis without interference from students’ after-school schedules.

Opportunities for Future Study

This study found that a brief, after-school goal setting intervention impacted academic achievement and self-perception in a small sample of gifted underachievers. To determine whether this intervention has a significant effect on the total population of gifted underachievers, this study could be replicated with a larger sample that reflects a wider demographic range. A larger sample size, as noted previously, could reduce the confounding effects of a small sample and increase the probability of true randomization, thus lending more validity to the results.

A greater understanding of how goal setting impacts academic achievement and self-perceptions could also be explored through a longitudinal study involving high school students. Examining the impact of the goal setting intervention across a longer timeframe could help determine if the effects of the intervention are long-term, thus enhancing the reliability of this study. Additionally, modifying this project to include guidance from school faculty such as teachers and counselors over the course of a semester would also yield insight into how personal goal setting could be better supported through a feedback loop. This type of intervention, built into the regular school day during an advisory or homeroom, could further explore how goal setting could impact the academic attitudes and achievement of gifted underachievers under the guidance of educators who can help students along the path of goal pursuit.

Finally, it is important to note that students' personal narratives might have influenced the way they processed the intervention and perceived schooling in general. Students in this study repeatedly referred to their underachievement and appeared somewhat anxious that they were not achieving as highly as they believed they could. This data, concurrent with the fact that the students in this study never mentioned that they were gifted, might indicate that students believe that they are no longer gifted due to their underachievement. Perhaps reminding students

that they are gifted, and giving them a chance to reconstruct their personal narrative in a positive light, may allow students to realize that they were indeed always gifted and simply lacked the self-regulatory strategies necessary to obtain higher academic achievement. The goal setting intervention could thus be replicated, with an additional component that allows students to elaborate on their own ideas of self and reflect upon their giftedness. This positive reconstruction of their personal narrative might give students the motivation needed to pursue their personal and academic goals, as well as enhance their overall feelings of well being.

Implications and Recommendations for Education Policy-Makers

Many students, especially minority and those who come from low-income families, are not meeting their academic potential. Casualties of this phenomenon often include gifted students, who have the demonstrated capability to understand and process information to a higher degree than their grade-level counterparts on multiple measures of assessment. Educational leaders thus often assume that gifted children are automatically endowed with the tools to reach their potential, and that success is a guaranteed outcome of their giftedness (Vlahovic-Stetic, Vidovic, & Arambasic, 1999; Robertson, 1991). Research, as well as the dropout rate for gifted students, provides strong evidence that this is not the case (Renzulli & Park, 2000).

Systemic change that meets the needs of our gifted learners must occur for these students to maximize their potential. This study found that a brief goal setting intervention positively impacted gifted underachieving high school students' academic achievement and self-perceptions. Furthermore, students in the study overwhelmingly reported that they enjoyed the process of goal setting and felt that the reflective planning was beneficial to their future. This

study suggests that setting goals has the potential to positively affect the academic outcomes for gifted students by motivating them to reflect on their desirable futures and planning goals to help them realize that future.

Educational leaders must find a way to help students create a bridge between the work they are doing in school and the future they want for themselves. Indeed, students themselves need to be able to look to school faculty to help them articulate their desired futures and plan a pathway toward goal attainment. Surprisingly, the students in this study did not mention that their current teachers or school staff members could help them in their goal pursuit. Only two students wrote about contacting a counselor to assist them in the college-going process, and no student stated that a teacher would help them meet their academic goals. Several students wrote about wanting more information on the college-going process because their school had not yet provided that information to them. This is unexpected, as the gifted students in this study are almost always placed on an honor's track due to their gifted identification. Students on the honor's track students are often given the most information about college, irrespective of their achievement level. From students' writing during the intervention, it appears that a structure for speaking to teachers or counselors about both academic and personal goals is largely absent, though the gifted underachievers could arguably benefit from this type of feedback.

To provide a better connection between the school and a student's personal goals, I recommend that goal setting should be used with the population of high school gifted students during advisory or homeroom to help students link their desired futures with the work they are doing in school. The homeroom or advisory period provides a semi-structured space for students to reflect on their goals, plan their steps toward reaching their goals, and review progress during goal pursuit under the guidance of a teacher. The cost to the school would be minimal, but the

potential benefit to the students would be immeasurable. In a classroom setting, teachers could help students create goals during the beginning of the year and conference with students individually regarding aspects of their goals to ensure that the goals are planned to be specific and attainable by the end of the year. Teachers could also help students track progress toward their goals and help students make adjustments to their goal plans if necessary. This process would provide students with personalized teacher support at the school site, which students in this study indicated was lacking.

Moreover, I recommend that the goal setting curriculum used in this study should be employed with all students, not just students who are identified as gifted. The national high school dropout rate remains a concern for educators, parents, politicians, and the general population, as far too many students do not complete the minimum educational requirements for entry-level jobs. Perhaps having students create goals for their academics, or even personal goals that they want to achieve, would help students increase their motivation to do well in school. Instead of only the school valuing their academic success, goal setting could have the potential to help students realize that their academic success now fits into their overall goals later in life thus increasing students' goal valuation. Students, after all, do have an inkling of what they want for their futures; educators must help guide students along the pathway to teach students how to create a plan to realize their own goals.

Another recommendation that emerges from this study's data is the need for students to be made more aware of the college-going process. Most students in this study wrote about going to college, and yet a good number of students in this study would not be eligible to attend any state universities with their current state of achievement. For example, several students with grade point averages below 1.5 spoke of enrolling in tier-one research universities after

graduating from high school. Students also wrote about being confused about the process of going to college and stated that the school had not provided sufficient information for them to begin making college decisions. In order for students to successfully matriculate to college, they need information regarding academic requirements, tuition, and the application process. Current budgetary concerns have eliminated many counseling positions from high schools, so my recommendation is to create college workshops in the homeroom or advisory period concurrent with goal setting activities. Perhaps if students fully understand what is necessary to go to college, they might create and pursue academic goals that will support them in being successful throughout the process.

A Final Reflection

Individuals who successfully navigate college and career are generally aware of their goals and have an internal process that helps them effectively pursue those goals. Gifted underachievers in this study also knew which goals they had for themselves, but seem confused or unsupported in their goal pursuit. It is my belief that teachers and counselors need to help students articulate what they want in the future and help students along the path of goal pursuit. Goal setting is not an “extra” curriculum item that needs to be fit into the school day; it is the core of the school day. The job of educators is not just to deliver content, but also to help students realize their potential. Gifted underachievers need to understand that they are indeed gifted, endowed with abilities that yearn to be tapped. It is our sacred duty to help these students articulate their dreams and support them in realizing them.

APPENDIX A

THREE-MONTH POST-INTERVENTION GOAL WRITING TASK

My Goals for the Future

Take a moment to think about some of the goals you have for the future. Think about personal goals that you might have, as well as academic goals that you might have for yourself.

What are some of the goals you have now?

Why do you want to reach these goals, and how do you plan to reach them?

[illegible]

APPENDIX B

SCHOOL ATTITUDE ASSESSMENT SURVEY – REVISED

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Directions: Please rate how strongly you agree with the following statements. In answering each question, use a range of (1) to (7), where (1) stands for strongly disagree and (7) stands for strongly agree. Please mark only one choice per question.

	<i>Strongly Disagree (1)</i>	<i>Disagree (2)</i>	<i>Slightly Disagree (3)</i>	<i>Neither Agree nor Disagree (4)</i>	<i>Slightly Agree (5)</i>	<i>Agree (6)</i>	<i>Strongly Agree (7)</i>
1. My classes are interesting.	☐	☐	☐	☐	☐	☐	☐
2. I am intelligent.	☐	☐	☐	☐	☐	☐	☐
3. I can learn new ideas quickly at school.	☐	☐	☐	☐	☐	☐	☐
4. I check my assignments before I turn them in.	☐	☐	☐	☐	☐	☐	☐
5. I am smart in school.	☐	☐	☐	☐	☐	☐	☐
6. I am glad that I go to this school.	☐	☐	☐	☐	☐	☐	☐
7. This is a good school.	☐	☐	☐	☐	☐	☐	☐
8. I work hard at school.	☐	☐	☐	☐	☐	☐	☐
9. I relate well to my teachers.	☐	☐	☐	☐	☐	☐	☐
10. I am self-motivated to do my schoolwork.	☐	☐	☐	☐	☐	☐	☐
11. I am good at learning new things at school.	☐	☐	☐	☐	☐	☐	☐
12. This school is a good match for me.	☐	☐	☐	☐	☐	☐	☐
13. School is easy for me.	☐	☐	☐	☐	☐	☐	☐
14. I like my teachers.	☐	☐	☐	☐	☐	☐	☐
15. I want to get good grades in school.	☐	☐	☐	☐	☐	☐	☐
16. My teachers make learning interesting.	☐	☐	☐	☐	☐	☐	☐
17. My teachers care about me.	☐	☐	☐	☐	☐	☐	☐

	<i>Strongly Disagree (1)</i>	<i>Disagree (2)</i>	<i>Slightly Disagree (3)</i>	<i>Neither Agree nor Disagree (4)</i>	<i>Slightly Agree (5)</i>	<i>Agree (6)</i>	<i>Strongly Agree (7)</i>
18. Doing well in school is important for my future career goals.	O	O	O	O	O	O	O
19. I like this school.	O	O	O	O	O	O	O
20. I can grasp complex concepts at school.	O	O	O	O	O	O	O
21. Doing well in school is one of my goals.	O	O	O	O	O	O	O
22. I am capable of getting straight As.	O	O	O	O	O	O	O
23. I am proud of this school.	O	O	O	O	O	O	O
24. I complete my schoolwork regularly.	O	O	O	O	O	O	O
25. It's important to get good grades in school.	O	O	O	O	O	O	O
26. I am organized about my schoolwork.	O	O	O	O	O	O	O
27. I use a variety of strategies to learn new material.	O	O	O	O	O	O	O
28. I want to do my best in school.	O	O	O	O	O	O	O
29. It is important to me to do well in school.	O	O	O	O	O	O	O
30. I spend a lot of time on my schoolwork.	O	O	O	O	O	O	O
31. Most of the teachers at this school are good teachers.	O	O	O	O	O	O	O
32. I am a responsible student.	O	O	O	O	O	O	O
33. I put a lot of effort into my schoolwork.	O	O	O	O	O	O	O
34. I like my classes.	O	O	O	O	O	O	O
35. I concentrate on my schoolwork.	O	O	O	O	O	O	O

APPENDIX C

FUTURE ORIENTATION SCALE

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Directions: Please read each numbered item. Choose the statement in the pair that best describes you. Once you have chosen the statement that best describes you, choose whether that description is “really true” for you, or “sort of true” for you.

	Really True for Me	Sort of True for Me				Sort of True for Me	Really True for Me
1.	☐	☐	Some people like to plan things out one step at a time	BUT	Other people like to jump right into things without planning them out beforehand	☐	☐
2.	☐	☐	Some people spend very little time thinking about how things might be in the future	BUT	Other people spend a lot of time thinking about how things might be in the future	☐	☐
3.	☐	☐	Some people like to think about all of the possible good and bad things that can happen before making a decision	BUT	Other people don't think it's necessary to think about every little possibility before making a decision	☐	☐
4.	☐	☐	Some people usually think about the consequences before they do something	BUT	Other people just act – they don't waste time thinking about the consequences	☐	☐
5.	☐	☐	Some people would rather be happy today than take their chances on what might happen in the future	BUT	Other people will give up their happiness now so that they can get what they want in the future	☐	☐
6.	☐	☐	Some people are always making lists of things to do	BUT	Other people find making lists a waste of time	☐	☐
7.	☐	☐	Some people make decisions and then act without making a plan	BUT	Other people usually make plans before going ahead with their decision	☐	☐
8.	☐	☐	Some people would rather save their money for a rainy day than spend it right away on something fun	BUT	Other people would rather spend their money right away on something fun than save it for a rainy day	☐	☐

	Really True for Me	Sort of True for Me				Sort of True for Me	Really True for Me
9.	O	O	Some people have trouble imagining how things might play out over time	BUT	Other people are usually pretty good at seeing in advance how one thing can lead to another	O	O
10.	O	O	Some people don't spend much time worrying about how their decisions will affect others	BUT	Other people think a lot about how their decisions will affect others	O	O
11.	O	O	Some people often think what their life will be like 10 years from now	BUT	Other people don't even try to imagine what their life will be like in 10 years	O	O
12.	O	O	Some people think that planning things out in advance is a waste of time	BUT	Other people think that things work out better if they are planned out in advance	O	O
13.	O	O	Some people like to take big projects and break them down into small steps before starting to work on them	BUT	Other people find that breaking big projects down into small steps isn't really necessary	O	O
14.	O	O	Some people take life one day at a time without worrying about the future	BUT	Other people are always thinking about what tomorrow will bring	O	O
15.	O	O	Some people think it's better to run through all the possible outcomes of a decision in your mind before deciding what to do	BUT	Other people think it's better to make up your mind without worrying about things you can't predict	O	O

APPENDIX D

THEORY OF INTELLIGENCE SURVEY

© Dweck & Henderson, 1989

Directions: People have different ideas about intelligence. Below are six statements that refer to views about intelligence. Read each one carefully. Please rate how strongly you agree with the following statements. There are no right or wrong answers.

In answering each question, use a range of (1) to (6), where (1) stands for strongly disagree and (6) stands for strongly agree. Please mark only one choice per question.

	<i>Strongly Disagree (1)</i>	<i>Disagree (2)</i>	<i>Sort of Disagree (3)</i>	<i>Sort of Agree (4)</i>	<i>Agree (5)</i>	<i>Strongly Agree (6)</i>
1. You have a certain amount of intelligence and you really cannot do much to change it.	O	O	O	O	O	O
2. Your intelligence is something about you that you cannot change very much.	O	O	O	O	O	O
3. You can learn new things, but you cannot really change your basic intelligence.	O	O	O	O	O	O
4. No matter who you are, you can change your intelligence a lot.	O	O	O	O	O	O
5. You can always greatly change how intelligent you are.	O	O	O	O	O	O
6. No matter how much intelligence you have, you can always change it quite a bit.	O	O	O	O	O	O

APPENDIX E

EXIT QUESTIONNAIRE

Directions: Please answer the following questionnaire based on the goal-setting program you just completed. In answering each question, use a range of (1) to (7), where (1) stands for strongly disagree and (7) stands for strongly agree. Please mark only one choice per question.

	<i>Strongly Disagree (1)</i>	<i>Disagree (2)</i>	<i>Slightly Disagree (3)</i>	<i>Neither Agree nor Disagree (4)</i>	<i>Slightly Agree (5)</i>	<i>Agree (6)</i>	<i>Strongly Agree (7)</i>
1. I enjoyed this goal setting project.	☐	☐	☐	☐	☐	☐	☐
2. I will probably set and work toward goals in the future.	☐	☐	☐	☐	☐	☐	☐
3. I think setting goals is helpful to my future.	☐	☐	☐	☐	☐	☐	☐
4. Setting academic goals can help me do better in school.	☐	☐	☐	☐	☐	☐	☐
5. I would recommend this goal setting project to a friend.	☐	☐	☐	☐	☐	☐	☐
6. This goal setting project was valuable to me.	☐	☐	☐	☐	☐	☐	☐
7. I took this project seriously.	☐	☐	☐	☐	☐	☐	☐
8. I completed this project to improve my grades.	☐	☐	☐	☐	☐	☐	☐
9. I completed this project for the compensation.	☐	☐	☐	☐	☐	☐	☐
10. I believe that setting academic goals and breaking them down into smaller sub-goals can help me do better in school.	☐	☐	☐	☐	☐	☐	☐

APPENDIX F

GOAL SCORING RUBRIC

SMART Goal Rubric

	3	2	1
<u>S</u>pecific	The goal targets one focus area.	The goal partially targets one area, but may lack clarity.	The target is unclear or absent from the goal.
<u>M</u>easurable	The goal is measurable because the evidence to be gathered will clearly indicate progress.	The goal is partially measurable because the evidence to be gathered will only somewhat indicate progress.	The goal is either difficult or impossible to measure because the evidence collected will not indicate progress.
<u>A</u>ttainable	The goal is reasonable, given the student's plan plan, and is achievable.	The goal is somewhat reasonable given the student's plan, and might be achievable.	The goal is unreasonable given a high school student's abilities, and will likely not be achieved.
<u>R</u>ationalized	A clear rationale is given for pursuing the goal.	A rationale for pursuing the goal is given, but may not be very clear.	Either no rationale or an unclear rationale is given for pursuing the goal.
<u>T</u>ime-bound	A clear, proximal timeframe is given stating how the goal is to be attained.	A general timeframe is given stating how the goal is to be attained.	No timeframe is given in which the goal is to be attained.

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