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Evaluating the Effects of a Strengths-Based, Professional Development Intervention on Adolescents' Academic, Social, and Emotional Outcomes

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DEDICATION

The following manuscript is dedicated to my mother, father, sister, grandparents and fiancé, Sarah, for all of their love and support throughout my graduate school career. I could have never gotten through these last five years without you all. God has truly blessed my life with an amazing family, and He continues to guide my path with grace and humility. Here's to a fresh start and the beginning of a great professional career. As Jack Kerouac once said, "Nothing behind me, everything ahead of me, as is ever so on the road." May life be filled with joy and always feel like a never-ending journey.

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ABSTRACT

This study examined the overall efficacy and treatment fidelity of a semester long after school intervention aimed at improving middle school students' overall academic achievement, subjective well-being (SWB), gratitude, and self-efficacy. Participants in the study included 6th to 8th grade students from two public middle schools in South Carolina. Upon registration for the after school program, students were randomly assigned to one of two conditions: (1) the *Leadership and Young Professionals* (LYP) treatment group or (2) the wait list control group who received intervention during the following school semester. Both subjective (self-report) and objective measures were collected on participants at two time points during the semester (i.e., at baseline and end of Quarter 2 grading period). Self-report measures included students' levels of life satisfaction, gratitude, self-efficacy, and frequency of positive and negative affect. Objective measures of the study consisted of students' school grades and after-school performance. After checking distributional assumptions, inferential statistics were used to assess group differences. The General Linear Model (GLM) was used for data with two time points with pre-test scores as covariates. To help visualize change and effect sizes, group means with 80% confidence intervals are graphed, and overall effect size calculations using adjusted Cohen's *d* to evaluate baseline to post-test group differences are presented. On self-report measures, significant main effects were found on SWB, gratitude, self-efficacy and teacher-student relationships with effect sizes (adjusted Cohen's *d*) ranging from 0.10 to 1.27 with an average of 0.56. On objective measures,

test results were mixed with significantly positive effects of the LYP treatment group on counselor-rated after school performance, with effect sizes ranging from 0.72 to 0.75 and negative effects on school grades for Math and English with null effects on Science and Social Studies. The current study provides further support for the overall efficacy of the LYP as a multi-modal positive psychology (MMPP) intervention to enhance adolescents' academic and social-emotional outcomes.

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CHAPTER 1

INTRODUCTION

Historically, the field of psychology has given relatively less attention to the understanding of how positive indicators of mental health, such as happiness, gratitude, and resiliency may relate to a person's overall mental health and lead to the development of optimal functioning (Seligman & Csikzentmihalyi, 2000). Psychologists, therapists, and researchers have focused primarily on negative outcomes of mental health including the assessment of mental disorders and psychopathology (Suldo, Huebner, Savage, & Thalji, 2010). As a result, mental health professionals have tended to overlook indicators of positive well-being. In the "search for pathology", psychologists have roughly equated the absence of psychopathology with positive mental health.

Acknowledging that traditional *deficit-focused* models of assessment and intervention may not effectively promote optimal human functioning, the field of positive psychology has begun to challenge conventional treatment methods for improving one's mental health. Leading researchers have defined *positive psychology* as the scientific study of how human beings function at their best, which is often associated with people's positive emotions, character strengths, and life circumstances that contribute to their overall happiness (e.g., SWB) or the "good life" (Seligman & Csikszentmihalyi, 2000; Seligman, Steen, Park, & Peterson, 2005). As a whole, positive psychology research has identified the need to study critical areas of youth development associated with optimal functioning and happiness (Proctor, Linley, & Maltby, 2009). This shift in focus on both

positive human factors and psychopathology together has improved the predictive power of outcomes when compared with more traditional *deficit-focused* models of assessment and intervention (Suldo & Shaffer, 2008). An area of study that has received substantial attention has been subjective well-being.

Defining Subjective Well-Being (SWB)

Diener, Scollon, and Lucas (2004) have described subjective well-being (SWB) as "an individual's own assessment of his or her own life—not the judgments of experts—and includes (1) life satisfaction (e.g., both global and in specific domains), (2) pleasant (positive) affect, and (3) low negative affect" (p.189). More specifically, *life satisfaction* has been generally defined as a person's cognitive evaluation of their overall life as it relates to important domains such as family, school, and peer relationships (Huebner, Valois, Paxton, & Drane, 2005; Diener, 1994). *Positive affect* has been described as the experience of frequent positive emotions (e.g., joyful, interested, or energetic) while *negative affect* typically refers to one's experience of frequent negative emotions (e.g., anger, sadness, or disgust). Previous research indicates that individuals' with high SWB frequently evaluate their lives positively and regularly experience positive emotions and few negative emotions (Myers & Diener, 1995).

Theoretical Models of SWB

The human development of SWB is quite complex and can depend on a variety of factors. Previous research has outlined three main theoretical approaches to the study of SWB (Kim-Prieto, Diener, Tamir, Scollon, & Diener, 2005). The three main theories of SWB each offer a unique conceptualization for assessment and intervention. The *first* theoretical approach of SWB involves a global assessment of life and its critical aspects

(e.g., family, friends, and community). Research studies based on this approach typically incorporate self-report measures to assess individuals' general happiness, or SWB. The *second* theoretical approach defines SWB as an evaluation of past emotional experiences. Using this approach, researchers usually ask participants to report their levels of positive and negative emotions over the last week, month, or longer. The *third* approach outlines SWB as a collection of multiple emotional responses across time (Kahneman, 1999; as cited in Kim-Prieto et al., 2005). To address these theoretical perspectives, researchers have developed testable models of SWB for the purposes of assessment and intervention with youth and adult populations.

By utilizing the third theoretical approach to explain the development of SWB, Durayappah (2011) proposed an elaborated model known as *The 3P Model*. This model also hypothesizes that the development of SWB is a product of a person's cognitive and emotional responses to *past*, *present*, and *prospective* (future) experiences. Durayappah (2011) suggested that *present* experiences are the strongest determinants of SWB because they are often the most salient to one's life. Previous research suggests that individuals who are presently experiencing positive emotions and high social self-efficacy are also more likely to report greater levels of SWB, or happiness (Lyubomirsky, King, & Diener, 2005; Bird & Markle, 2012). Likewise, *past* experiences also contribute to present levels of SWB. Research has indicated that reminiscing, experiencing gratitude, and finding meaning in previous life events can positively influence a person's SWB (Emmons & McCullough, 2003; Froh, Sefick, Emmons, 2008). Finally, research demonstrates that *prospective* experiences (i.e., anticipated events in the future) can also contribute to a person's SWB. Previous studies have found that focusing on positive prospective, or

future, experiences can increase one's sense of hope (Snyder, Rand, & Sigmon, 2005), optimism (King, 2001), and purpose in life (Sheldon, Kasser, Smith, & Share, 2002); thus also improving a person's SWB.

Given the importance of these temporal experiences to SWB, Durayappah (2011) suggested that future studies should develop interventions to target all three temporal components (i.e., past, present, and perspective experiences) related to increasing SWB. As a result, the present study integrates a series of temporally-based positive psychology interventions with professional development exercises aimed at increasing adolescents' levels of SWB, gratitude, and other critical outcomes. This approach has the potential to explain more variance in youths' SWB.

Rather than focusing on past, present, and prospective experiences of SWB, some other psychological theories and studies have focused more narrowly on the constructs of positive emotions and life satisfaction (e.g., two measured components of SWB). One prime example, Barbara Fredrickson's (2001) "Broaden and Build Theory" of positive emotions, hypothesizes that regularly experiencing positive emotions (or affect) allows human beings to *broaden* their thought-action repertories and help *build* resiliency and personal resources to promote flourishing in life. Fredrickson's theory is applied in the current study through guiding middle school students in learning about how to use their personal character strengths in school, community, and professional environments (e.g., college and the workplace).

SWB and Adult Social Support

Previous research has shown that close interpersonal relationships are important for maintaining one's positive well-being (Diener, Gohm, Suh, & Oishi, 2000). More

specifically, adolescent's life satisfaction (i.e., cognitive component of SWB) has been strongly related to adult social support and positive parent-child interactions; previous studies have found that parent support is a critical factor to students' life satisfaction (Antaramian, Huebner, & Valois, 2008). For example, previous findings suggest that social support from family, teachers, and peers has been positively associated with perceived life satisfaction (Diener & Fujita, 1995).

Research has also shown that parents' attitudes towards their child's teachers and school greatly influence students' abilities to effectively communicate and assess their academic resources (Arnold et al., 1994). Likewise, parental academic involvement has been strongly associated with student achievement, which in turn is related to educational and career-based aspirations for youth (Hill et al., 2004). To evaluate these previous studies and theoretical models, researchers have begun to investigate the causes of long-term SWB, or happiness, in youth and adult populations. The study of SWB and positive outcomes in young individuals is often referred to in the literature as the *positive youth development* movement.

Positive Youth Development (PYD)

Relative to positive psychology, research focused on *positive youth development* (PYD) is a rapidly burgeoning and promising subject of interest. The PYD perspective has evolved from a movement towards more preventative-based research strategies to address the limitations of problem-focused interventions (Lerner, Almerigi, Theokas, & Lerner, 2005). Most recently, the debate around how youth can function and flourish in human systems has become a major topic of interest in positive, developmental and cognitive psychology (Larson & Henson, 2005). Before adolescents and young adults of

the 21st century can apply for careers and colleges, they must first have an understanding of how to function in complex human systems. More contemporary positive psychology researchers have emphasized that human societies should provide educational processes focused on pro-social behaviors and interpersonal development (Althof & Berkowitz, 2006; Larson, 2000).

To address these growing concerns, researchers from the 4-H Study of PYD being conducted in multiple states across the nation following groups of students in grades 5 to 7 have hypothesized a series of latent constructs (i.e., the "Five Cs") that can be utilized for longitudinal research on youth thriving (Eccles & Gootman, 2002; Roth & Brooks-Gunn, 2003a,b). The "Five Cs" model of PYD includes: *Competence, Confidence, Connection, Character, and Caring.* These developmental constructs have been revised and refined over a 9-year study to help other researchers and practitioners to more accurately measure and predict critical outcomes for youth (Phelps, Zimmerman, Warren, Jelicic, Eye, & Lerner, 2009). Similar to the 4-H studies, Guerra and Bradshaw (2008) also identified five core competencies that are shown to be related to behavioral risk prevention and PYD including: (1) a positive sense of self, (2) behavioral self-control, (3) decision-making skills, (4) a moral system of belief, and (5) prosocial connectedness.

Consistent with multi-construct models proposed by the 4-H studies and Guerra and Bradshaw, interventions related to PYD have integrated multi-modal evidence-based strategies aimed at enhancing youths' subjective well-being, goal setting abilities, moral development, and self-efficacy. Several distinct, single-modal types of intervention have been identified through previous research, and new approaches are currently being tested. Most often, interventions targeting PYD outcomes feature an enriched curriculum that

places a strong emphasis on community engagement and strength-based assessment (Eccles & Gootman, 2002; Lerner, 2004). Shifting the focus to evidence-based positive youth development interventions in school-based settings has the potential to greatly strengthen the foundation for psychological assessment, prevention, and intervention of youth with disabilities in schools. As a result, the current study evaluated the positive effects of learning about civic engagement through structured extracurricular activities (e.g., an after-school program) on adolescent development.

Research on SWB and Positive School Functioning

It has been shown that school and community-based interventions have the potential to enhance children and adolescents' SWB and positive behavior; however, these programs require thoughtful preparation and multiple systems of support working in a collaborative effort (Bird & Markle, 2012). The transition to high school has traditionally functioned as a critical milestone for students to overcome during early- to mid-adolescence. In today's global economy, the educational stakes for American youth are growing even higher and more competitive. Peer competition and requirements for enrollment have increased for students now looking to get accepted into two- or four-year colleges, find an appropriate career, save money to afford expenses, and ultimately take on a desirable career after successful completion of school.

As the social framework of working society increases its demands on students for higher-level training and career professionalism, young people should continue on to educate themselves throughout a greater portion of their lifetime (Caprara et al., 2008). Schools, universities, and other related transitional services for adolescent youth must

begin to address these mounting national education concerns head-on through evidence-based intervention programs that extend beyond the regular school day.

Previous studies have revealed that youth involved in structured extracurricular activities (SEAs) have shown higher life satisfaction and social interests compared to students who are alone at home after-school or with friends without adult supervision (Gilman, 2001). Evidence-based after-school and summer programs are two types of SEAs that can help youth in developing motivation for school and career-related goals while also optimizing SWB. By providing students with more engaging and positive learning environments, educators and psychologists have the ability to enhance youth well-being and self-efficacy related to school, social interactions, and other important aspects of human functioning such as a better sense of personal control.

Research indicates that youth, who have formed healthy motivational beliefs including a greater sense of control over their lives, are ultimately more satisfied with their lives (Neto, 2001). School systems, psychologists, and education professionals in the 21st century should take into account the way in which children and adolescents develop social and emotional competencies and how they apply these skills in real world settings. To address youth's development and use of positive social skills, schools and SEAs are beginning to adopt the PYD perspective to improve students' educational and personal outcomes.

The theoretical perspective supporting this intervention study postulates that, by learning several positive social and emotional skills (e.g., gratitude, problem-solving, and goal-setting) in middle school, older adolescents (i.e., in high school and college) will be able to achieve greater success within academic and career environments. Although this

study does not address long-term career and school outcomes, it does test to see whether or not short-term gains can be achieved in a semester-long, weekly multi-modal positive psychology intervention delivered in an after-school program for middle school students.

The literature review that follows describes the empirical justification for each of the interventions selected for the proposed multi-modal intervention. As discussed in greater detail in the following section, each intervention approach was selected because (1) it had at least some empirical support, and (2) it seemed to be feasible to implement with fidelity as part of a weekly 1-hour long intervention. Moreover, interventions were selected that made a unique contribution to the whole multi-modal intervention package such that they were thought to add incremental or synergistic contributions to the overall efficacy on student outcomes of the intervention group.

Positive Psychology Interventions

In the past few decades, psychologists have begun to develop a variety of positive psychology exercises and techniques to improve people's overall SWB, gratitude, and related character strengths. Sin and Lyubomirsky (2009) describe *positive interventions* as "treatment methods or intentional activities aimed at cultivating positive feelings, positive behaviors, or positive cognitions" (as cited in Proyer et al., 2012). More often in previous years, research studies on *positive*, or *strength-based*, interventions have largely involved adult populations. A small number of treatment and intervention studies have now been published that specifically target children and adolescent's SWB, gratitude, and personal character strengths. Efficacy studies indicating the positive effects of strength-based interventions on youth's academic outcomes and social-emotional well-being are

slowly gaining momentum in psychological research. A brief review of the literature on positive psychology interventions by research topics is included in the sections below.

Gratitude Interventions. Gratitude journaling has been shown as one strategic approach of increasing SWB through encouraging individuals to focus on positive previous experiences. For example, Froh, Sefick, and Emmons (2008) evaluated the direct effects of counting blessings on a large sample of adolescents' gratitude and SWB. Over a two-week period, eleven classrooms in a public middle school were randomly assigned to one of three conditions: (1) gratitude writing, (2) hassles writing, or (3) a no treatment control group. From the results of the study, investigators found that students in the gratitude writing condition reported significantly less negative affect and higher levels of life satisfaction when compared to the other two group conditions. Of important note, the largest increase in life satisfaction for the youth sample was related to school when measured at post-intervention and three weeks later. Previous research has shown that school satisfaction serves as a critical outcome related to optimal health and wellness for children and adolescent-aged youth (Suldo et al., 2010).

As a follow-up study, Froh, Kashdan, Ozimkowski, and Miller (2009) also examined the effects of a gratitude journaling and letter writing intervention on youth compared to a control group and whether or not positive affect (PA) served as a moderator of gratitude outcomes at post-treatment. Results confirmed that youth who were low in PA in the gratitude condition reported higher levels of gratitude and PA at post-treatment compared to the control group. From these previous findings, it could be hypothesized that gratitude journaling and letter writing may show the largest benefits for those students initially lower in well-being and PA.

A second intervention approach for increasing gratitude and SWB has involved writing letters of gratitude and reading them to a chosen benefactor. In a large sample of adults, Seligman et al. (2005) found that when compared to four other positive-based exercises, writing a gratitude letter and reading it to the recipient in person showed the largest positive change in happiness, or SWB, and decreases in depressive symptoms. Similarly, Toepfer and colleagues (2012) evaluated the effects of writing three letters of gratitude over a 3-week period versus not writing any letters (i.e., the control group). Results from the study indicated that writing the three letters of gratitude significantly increased participants' happiness and life satisfaction, while decreasing symptoms of depression.

Although these previous studies have shown promising effects, a limited number of gratitude interventions have been conducted on youth populations. Nevertheless, it appears that the letter writing intervention is a feasible addition to the current protocol for middle school students that could add to the overall efficacy. Thus, to increase SWB through youth's *past* experiences, two interventions aimed at enhancing gratitude will be implemented. First, similar to Froh et al. (2008), adolescents will count blessings and write about them in a personal journal on a weekly basis. Second, as in Froh et al. (2009) and Toepfer et al. (2012), students will write gratitude letters and read them to a chosen benefactor.

Character Strengths Interventions. Positive qualities, abilities, and personality traits, commonly referred to as *signature character strengths*, have shown to greatly influence youth's SWB, or happiness. An outgrowth of assessment and intervention research with youth and adult populations indicates that learning about and building one's

character strengths can lead to increased SWB overtime. For example, a recent study focused on character strengths (Seligman et al. 2005) randomly assigned young adult participants to one of two conditions: (1) take note of using character strengths more often or (2) choose one character strength and use it in a new and different way each day for one week. When comparing the two experimental groups, they discovered that participants who used one character strength in a new and different way each day indicated greater increases in happiness, or SWB, in relation to participants in the other group.

In a recently published study, Proyer, Ruch, and Buschor (2012) recruited 178 adults and randomly assigned them to a treatment, contact control, or wait list (second) control group. Participants in the treatment group (i.e., the *Zurich Strengths Program)* were trained on character strengths that were highly correlated with life satisfaction (e.g., hope, gratitude, and curiosity) while the contact control group was trained on strengths that were low in correlation with life satisfaction (e.g, appreciation of beauty, creativity, and perspective). From pre- to post-test measures, adults in the treatment group exhibited significantly higher increases in life satisfaction compared to the other two groups.

In reviewing the literature, very few studies on character strengths have been conducted on youth samples. Gillham and colleagues (2011), as one example, evaluated the predictive validity of specified thematic groups of character strengths on high school adolescents' SWB and depressive symptoms. In their study, a total of 24 total character strengths that had been identified in previous research studies (Peterson & Seligman, 2004; Seligman et al., 2005) were further categorized into five (5) domains including *Transcendence* strengths, *Temperance* strengths, *Intellectual* strengths, *Leadership*

strengths, and *Other-directed* strengths. Of these five larger domains, *Transcendence* strengths (e.g., hope, purpose in life, and gratitude) robustly predicted higher levels of life satisfaction. Furthermore in a sample of 247 adolescents, Weber and Ruch (2012) found that *Intellectual* character strengths of the mind (e.g., self-regulation, love of learning, and perseverance) significantly predicted school success (e.g., course grades) and also teacher-rated positive behavior in the classroom. Taken together, these previous studies reveal the important contribution of promoting character strengths to increase youth's SWB and positive school functioning. To promote character strengths in youth, the present study integrates a similar intervention approach to evaluate its positive effects on adolescents' SWB and related outcomes (see below).

Goal Setting Interventions. For several decades, hundreds of research studies have been conducted on theoretical models of goal setting and human motivation (Latham & Locke, 2007; Morisano et al., 2010). Based on Social Cognitive Theory and the prevention literature, it is crucially important for middle school students to develop positive outcome expectations and personal efficacy regarding educational and career goals (Bandura, 1997; Botvin & Kantor, 2000). Psychologists from a social-cognitive framework have discovered a strong relationship between one's SWB, goal setting, and self-efficacy. Moreover, goal setting and self-efficacy have been posited to have the greatest influence on human motivation across all age groups (Locke & Latham, 2002). Previous studies have indicated that individuals with high self-efficacy set high goals for themselves, stay committed to those goals over time, use better task strategies to attain goals, and respond more positively to constructive feedback than do those people with lower self-efficacy (Latham, 2001; Locke & Latham, 1990; Sejits and B. W. Latham,

2001; as cited in Locke et al. 2002). In addition, studies on adolescents support the positive relationship between youth's SWB and hope towards establishing future goals. Research on samples of children and adolescents have illustrated that higher levels of hope are correlated with increases in students' school grades, life satisfaction, and positive affect (Chiarrochi, Heaven, & Davies, 2007; Valle, Huebner, & Suldo, 2006).

Macleod, Coates, and Hetherton (2008) recently conducted a study to evaluate the effects of a brief goal setting and planning skills (GAP) intervention on young adults' (i.e., college students) global and domain specific levels of SWB. The GAP intervention group involved three weeks of activities that promoted time management, goal setting, and organization skills. Results from the GAP intervention revealed that participants in the treatment group showed significant increases in levels of self-reported well-being when compared to students in the control group (Macleod et al., 2008). However, it does not appear that goal setting occurs independently for many youth, and as a consequence, a significant subset of youth need an additional level of support with social and emotional competencies, which often include goal setting, career planning, and executive skills.

Marques, Pais-Riberio, and Lopez (2007) who created the "Building Hope for the Future" program focused on the development and sustainability of prospective goals for middle school students while also incorporating a cognitive-behavioral, solution-focused therapeutic relationship with youth participants. Research methodology was based on Lopez and colleagues' (2000) earlier program, "Making Hope Happen", an intervention designed to increase hope in adults through helping them learn how to set and achieve their personal goals. The Building Hope for the Future program involved four major components including: (1) developing and refining clear goals, (2) generating action

plans towards achieving goals, (3) creating and maintaining motivation for goal pursuit, and (4) discussing the potential obstacles or challenges that may be encountered. To improve outcomes in the adolescent study, parents and teachers received intervention manuals and a one-hour training session prior to the beginning of the program. Most notably, students in the treatment group who completed the five-week intervention reported significantly higher levels of life satisfaction, hope, and feelings of self-worth (e.g., Marques et al., 2007; as cited in Suldo et al., 2010).

Problem Solving Skills Interventions. In the "pursuit of happiness", a person's ability to overcome barriers or obstacles to their personal goals has been shown to contribute to one's subjective well-being (SWB), or happiness. As one example, Ayres and Malouff (2007) investigated the impact of problem-solving skills training on adults' perceived self-efficacy to attain life goals and resolve potential obstacles, therefore aiming to also improve SWB. Over a four-week intervention period, participants wrote in a journal twice-weekly describing what efforts they had taken towards achieving their self-set goals. Results from the study indicated that participants in the intervention group experienced increases in problem-solving self-efficacy, life satisfaction, and positive affect compared to the no-treatment control group.

Previous research studies have also identified the beneficial effects of problem solving interventions on aspects of youth development including academic performance as well as behavioral and psychological adjustment (see Durlak & Wells, 1997 for meta-analysis). Social and informational problem solving models have been used as an effective practice by researchers and practitioners in diverse fields of study (Cottrell & Eisenberg, 2001; Eisenberg & Berkowitz, 1990) including school-based programs for

children and adolescents (Elias, Gara, Ubriaco, Rothbaum, Clabby, & Schuyler, 1986; Kraag, Zeegers, Kok, Hosman, & Abu-Saad, 2006). Other intervention studies involving problem-solving skills with youth populations in controlled trials have led to enhanced self-efficacy (e.g., a positive sense of self), improved decision-making skills, and increased self-regulation skills.

In a randomized controlled study, Sharma, Petosa, and Heaney (1999) found that sixth grade students assigned to a problem-solving skills intervention based on social-cognitive theory (SCT) indicated statistically significant improvements in self-efficacy for problem-solving skills as compared to an equivalent knowledge-based intervention that focused only on discussing common stressors experienced by middle school students.

More recently, Linares and colleagues' (2005) examined intervention effects of a universal prevention program led by classroom teachers called the Unique Minds School Program (UMSP). Using a non-randomized approach, 119 elementary school students across two schools were assigned to either the intervention school (i.e., the UMSP prevention program) or the comparison school. The teacher-led UMSP curriculum was designed to promote students' cognitive and social-emotional skills through exercises involving problem-solving skills, coping skills, behavioral self-management, and character education. From the study's results, students in the intervention showed significant gains in student self-efficacy, use of problem solving skills, math grades and social-emotional competencies (e.g., attention, behavioral compliance, and lack of aggression).

Altogether, these intervention studies highlight the positive effects of problem solving interventions on youths' academic achievement and social-emotional outcomes.

To promote the learning of social problem-solving skills, the present study integrated social problem-solving and role-playing exercises dealing with high school, college, and career topics.

The Current Study

Intervention strategies for the present study were chosen based on their level of previous empirical support and feasibility within an after-school program setting. In the summer of 2011, primary investigators of the current study evaluated the positive effects of a comprehensive summer intervention on adolescents' SWB and related outcomes (Bird, Smith, & Lyons, under review). Results from this pilot study revealed that youth assigned to the treatment group reported higher levels of SWB, gratitude, and social self-efficacy compared to participants in a wait list control group. This follow-up intervention study involved the same collection of positive, strength-based approaches including:

(1) Gratitude Journaling, Letters of Thankfulness, and Gratitude Visits

(2) Character Strengths Development

(3) Goal Setting and Attainment Scaling

(4) Social Problem-Solving Skills

(5) Leadership and Professional Development Skills

As described in Durayappah's (2011) *3P Model*, focusing on *past, present,* and *prospective* (or future) experiences may all contribute to the development of SWB. By incorporating the above-mentioned positive psychological intervention strategies with leadership and professional development exercises, the current study evaluated the overall effects of a comprehensive after-school intervention on enhancing youth's SWB,

gratitude, perceived self-efficacy and academic-related outcomes (e.g., school grades, student engagement, and academic competence).

CHAPTER 2

RESEARCH QUESTIONS AND HYPOTHESES

The primary research questions and hypotheses of this study included:

Question #1: Does the LYP treatment group have a significant effect on students' self-report (i.e., subjective) outcomes (i.e., SWB, gratitude, student engagement and perceived self-efficacy)? ***Hypothesis #1:*** Students in the LYP treatment group will provide ratings indicative of improvement on all self-report (subjective) measures, from pre- to post-intervention, compared to students in the wait list control group.

Question #2: Does the LYP treatment group have a significant effect on students' objective outcomes (i.e., school grades and counselor-rated after-school performance)?

Hypothesis #2: Students in the LYP treatment group will obtain higher school grades and higher staff ratings on after-school performance (i.e., academic competence and interpersonal competence) from pre- to post-intervention compared to students in the wait list control group.

CHAPTER 3

METHODS AND RESEARCH DESIGN

Participant Recruitment and Retention

Challenging Horizons Program. All students were recruited from an after-school program at a high poverty middle school. The after-school program was supported by a 21st Century Community Learning Center (CCLC) grant, and the service-provider was the *Challenging Horizons Program* (CHP) of South Carolina. The CHP is an evidence-based, non-profit service learning organization, which is housed in the University of South Carolina's (USC) Department of Psychology. In December 2010, the CHP was officially added to the *National Registry of Evidenced-Based Programs and Practices* (NREPP). Over the past decade, the CHP in SC has offered a large number of after school and summer programs for youth of all ages, from 2nd to 8th grade.

Participants in the CHP are students categorized as at-risk by parents, teachers, and school administrators. All participants qualified for free and reduced lunch status and received scholarships to attend the CHP after-school program. Additional risk categories included course grades (e.g., receiving a grade of "D" or "F" in one or more core classes), family income (e.g., free or reduced lunch status), and frequency of school disciplinary referrals. Eligible student participants were recruited through open parent registration at two public middle schools in central South Carolina with additional consultation from school teachers and administrators. Openings in the program were quickly filled from a wait list.

The student to staff ratio in the CHP is generally 7:1, with each program including a site supervisor (i.e., professional staff member with experience who manages all students and staff), three to five senior staff members (i.e., group leaders who are responsible for up to 15 students and work approximately 15 hours per week), and junior staff members (i.e., USC students who volunteer or receive course credit for participation through a service learning class). CHP staff members have considerable contact with students, as the program is implemented three hours a day, five days a week. Additional information on the CHP organization is located on the following website: http://scstudentexcellence.org.

Participants in the LYP Study. A subset of students who attended the CHP after school program were then recruited for the semester long intervention. Prior to beginning the study, parent consent and student assent forms were reviewed with parents and youth by phone or in-person. Parents of 93 students provided written consent and students provided written assent to participate in the semester-long intervention. Demographic and baseline data were then collected on all middle school students who enrolled in the intervention study during the 2012-2013 academic year.

All 93 students with parental consent then assented to do the study using IRB approved procedures. These students were randomly assigned to one of two conditions: (1) the *Leadership and Young Professionals* (LYP) treatment group or (2) a wait list control group. Students assigned to the wait list control group participated in the LYP treatment condition during the second semester (quarters three and four of Spring 2013) of the academic year. Five students (2 from treatment group, 3 from wait list control group) withdrew from the study throughout the 10-week intervention period due to (a)

moving away and changing schools (n = 1) and (b) student choice to discontinue participation in the after school program (n = 4). Two additional students (1 from treatment, 1 from wait list control) were removed from the after school program due to excessive behavioral infractions (i.e., fighting and bullying other students in the CHP program). As a result, participants in the current study included a total of 86 adolescents (ranging from 6th to 8th grade) from two public middle schools with 34 sixth grade, 34 seventh grade, and 18 eighth grade students.

Primary investigators of the current study collected self-report data at two time points including baseline measurement (about four weeks into the school year) and at post-intervention (the end of Quarter Two grade period). Repeated measures were collected on all students' levels of SWB (e.g., levels of life satisfaction and frequency of positive and negative affect), gratitude, and dimensions of perceived self-efficacy and student engagement. Objective measures of the intervention included quarterly school grades in four core subject areas (i.e., Math, English, Science, and Social Studies) and counselor-rated after school performance. A complete description of both the subjective and objective measures used for the study is included in the following sections.

Measures and Instruments

Subjective (Self-Report) Measures

Brief Multidimensional Students' Life Satisfaction Scale (BMSLSS). Critical components of student's life satisfaction (i.e., the cognitive component of SWB) were measured at baseline and post-intervention (end of quarter two grading period) using the *Brief Multidimensional Students' Life Satisfaction Scale* (BMSLSS). The BMSLSS (Huebner, 1997) is comprised of six items in which students self-evaluate their levels of

life satisfaction in critical areas of youth development. The five critical domains of life satisfaction that the scale assesses include: *personal self, family, friends, school, and living environment.* On the BMSLSS, students rate their life satisfaction in these five domains using a 7-point *Likert* scale, ranging in value from 1=*terrible* to 7=*delighted* (Andrews & Withey, 1976).

The BMSLSS has been tested and validated on child and adolescent samples, which range from elementary to post-secondary school (i.e., college level) students. Preliminary validity testing of the BMSLSS was conducted on a large sample of middle school aged students (N=221); in this study, internal consistency of the BMSLSS was evaluated and a reliability coefficient of 0.75 for the Total score was obtained on the sample (Seligson, Huebner & Valois, 2003). In a similar study on a sample of high school students, the BMSLSS's test-retest reliability was reported for a two-week interval (Funk et al., 2006; Huebner et al., 2006), with domain-specific coefficients of 0.85 (Family), 0.80 (Living Environment), 0.79 (Personal Self), 0.75 (School), 0.62 (Friends), and 0.91 (Total). Correlation coefficients for the BMSLSS self-report measure indicate stable levels of reliability for both middle and high school aged students' self-reports of overall and domain-specific life satisfaction.

Positive and Negative Affect Schedule for Children (PANAS-C). Participants in the current study were also given the PANAS-C at baseline and post-intervention time points to assess students' levels of positive and negative affect (i.e., two emotional components of SWB). Originally, the *Positive and Negative Affect Schedule*-PANAS (Watson, Clark, Tellegen, 1988) was developed and validated on a sample of undergraduate students and young adults (N=267). The initial PANAS was a 30-item

measure that consisted of 15 *Positive Affect* (PA) and 15 *Negative Affect* (NA) items. Preliminary test results from the study indicated sufficiently high internal reliability coefficients (Cronbach's alpha), ranging from 0.86 to 0.90 for PA and 0.84 to 0.87 for NA.

In order to evaluate youth samples, Laurent and colleagues (1999) developed the child form, the PANAS-C, a modified version derived from the well-established PANAS scale for adult populations. The PANAS-C is a shorter 27-item self-report measure in which children and adolescents (aged 9 to 17 years old) provide frequency ratings of positive and negative affect using a 5-point *Likert* scale, which ranges from 1=*very slightly or not at all* to 5=*extremely or all of the time*. Overall, the PANAS-C measure consists of 12 PA (e.g., happy, cheerful) and 15 NA (e.g., sad, frightened) adjectives. Coefficient alphas for the 12-item PA scale were 0.90 and 0.89 and for the 15-item NA scale were 0.94 and 0.92, respectively in the scale development and replication subsamples. Initial psychometric results for the PANAS-C have indicated strong convergent and discriminant validity with existing child measures of anxiety and depression; but further replication and validation of these findings with large samples of school-aged children and clinical populations has been warranted (Laurent et al., 1999). As a whole, there is a substantial amount of evidence for the reliability and validity of both the PANAS and PANAS-C for adult and youth-aged populations.

Gratitude Questionnaire (GQ-6). To evaluate students' levels of gratitude (or thankfulness) in life and towards other people, participants in both the LYP treatment and wait list control groups were administered the *Gratitude Questionnaire (GQ-6)* six-item form (McCullough, Emmons, & Tsang, 2002). The GQ-6 is a self-report measure, which

includes six (6) brief statements that individuals provide ratings of their level of gratitude on a 7-point *Likert* scale, ranging from 1=*strongly disagree* to 7=*strongly agree.*

Recent psychometric studies with youth have provided strong empirical support for the overall reliability and validity of the GQ-6 scale on predicting gratitude. For example, Froh and colleagues (2011) conducted a psychometric validation study of the GQ-6 on a large sample of adolescents (N=1,405). Results from the study indicated strong internal consistency for youth aged 10 to 19 years old on the GQ-6 scale, as all alpha levels were above 0.75 (ranging from 0.76 and 0.85). Student participants' levels of gratitude in both groups were evaluated using the GQ-6 scale at baseline and post-intervention time points.

Children's Perceived Self-Efficacy (CSPE) Scales. The *Children's Perceived Self-Efficacy (CPSE)* scales are a set of self-report measures that assesses students' self-efficacy in critical domain areas associated with academic, social, and emotional factors. Bandura (1990) designed the CSPE scales for the purpose of reliably measuring youths' levels of perceived self-efficacy. More specifically, the CSPE assesses children and adolescents' perceived self-efficacy associated to three main factors: (1) *academic self-efficacy,* (2) *social self-efficacy*, and (3) *self-regulatory efficacy.* The *CSPE* scale consists of 55 items in which youth are instructed to rate their degree of confidence (or certainty) on a 0 to 100 point *Likert* scale, ranging from 0=*cannot do at all* to 100=*highly certain can do*. Students provide ratings for each statement as it corresponds to one of the above-mentioned domains. In the past two decades, the CSPE has been utilized in a number of empirically based studies with youth-aged populations. Pastorelli and colleagues (2001) conducted a cross-national study of the CSPE that indicated strong

reliability coefficients for the three main factors of the scale including 0.87 for *academic self-efficacy,* 0.75 for *social self-efficacy,* and 0.80 for *self-regulatory efficacy.* Another study on the CSPE revealed that children's perceived social self-efficacy was primarily linked to emotional well-being. Results from the above studies indicate strong test-retest reliability and predictive validity for the CSPE scales with youth populations. Students in both the LYP treatment and wait list control groups were administered the CSPE scales at baseline and post-intervention time points.

Student Engagement Instrument (SEI). A group of research investigators from the Institute of Education Sciences (IES) branch of the U.S. Department of Education with support from the Regional Educational Laboratory of the Southeast reviewed 21 existing instruments for measuring student engagement in elementary through high school. One of the primary scales of student engagement reviewed in their report included the *Student Engagement Instrument* (SEI). Scale development and psychometric validation for the SEI (Appleton et al., 2006; Reschly et al., 2008) was conducted on a sample of 1,931 students in 9th grade.

The version of the SEI utilized for the current study is a self-report questionnaire that consists of 33 items that measures students on two main constructs: *cognitive* and *psychological* engagement. Students are instructed to rate their level of engagement across six (6) subscales on a 4-point *Likert* scale, ranging from 1=*strongly disagree* to 4=*strongly agree*. Preliminary test results of the SEI indicated high internal consistency (Cronbach's alpha) for the six subscales including: 0.88 for teacher-student relationships, 0.80 for control and relevance of school, 0.82 for peer support for learning, 0.78 for future aspirations and goals, 0.76 for family support for learning, and 0.72 for extrinsic

motivation. Results from Appleton et al., (2006) have confirmed that subscales of the SEI were positively correlated with measures of academic performance (i.e., GPA and reading/math achievement) and negatively correlated with disruptive behaviors (i.e., the frequency of suspensions). Students' levels of engagement in both groups were assessed at baseline and post-intervention (end of quarter two) using subscales on the SEI.

Objective Measures

Grade Reports. Upon registering for the after-school intervention, parents provided written consent for research investigators to have access to their child's electronic grade reports and standardized test scores. The investigators submitted students' names and identification numbers to the school district in order to retrieve school grade reports. After youth participants were selected for the after-school program, those students also provided written assent to allow investigators to view their course grades. To evaluate group differences during the study, principal investigators collected and maintained all participants' grades throughout the Fall 2012 to Spring 2013 academic year. Grade reports were kept confidential and locked within password protected computer files.

After-School Performance Survey (ASPS)- To measure students' academic and interpersonal competence, a revised version of the *Classroom Performance Survey*- CPS (Robins, 1996) was administered to one of the student's primary after-school counselors at baseline and post-intervention times points over the course of the intervention. The revised version of the CPS is entitled the *After-School Performance Survey* (ASPS) and was generated for use with students in after-school and summer programs. Training was

provided to all CHP staff members and counselors on how to complete the ASPS prior to the beginning of the school year.

The ASPS measure includes 20 items for CHP staff members and counselors to provide ratings of individual student's academic and behavioral performance on a 5-point *Likert* scale, ranging from 1= *Always* to 5=*Never*. Items on the ASPS evaluate students on academic competence variables such as their organization skills ("Records homework assignments consistently"), assignment completion ("Completes school homework on time"), activity participation ("Attends to instruction during CHP"), promptness ("Arrives to CHP on time"), and level of preparedness ("Brings necessary materials to CHP). Another set of items on the ASPS evaluates students' interpersonal competence such as their ability to communicate ("Communicates own needs or asks questions"), maintain peer relationships ("Relates positively to peers"), and show respect for others ("Demonstrates respect for property"). Using the ASPS, CHP senior staff members monitored students' overall progress during program hours. Each CHP senior staff member was assigned approximately ten to 15 students to assess on the ASPS twice during the school year (i.e., at baseline and post-intervention).

Table 1 below outlines both the subjective (self-report) and objective measures as well as the data time points of the intervention study.

Table 3.1. Measures (or Constructs) and Data Time Points

Self-Report (Subjective) Measures	**Baseline or Quarter 1 (Pre-test)**	**End of Quarter 2- (Post-test)**
Life Satisfaction	BMSLSS	BMSLSS
Positive Affect and Negative Affect	PANAS-C	PANAS-C
Gratitude	GQ-6	GQ-6
Self-Efficacy (three subscales)	CPSE scales	CPSE scales

Student Engagement (five subscales)	SEI	SEI
Objective Measures		
School Grades	Quarter 1 grades	Quarter 2 grades
After School Performance (two subscales)	ASPS (Mid-October)	ASPS (Mid-February)

Procedures

During the first few weeks of the CHP after-school program, baseline data were collected on all middle school students who enrolled in the intervention study. Students in the CHP program participated in a daily schedule of activities from 2:45 p.m. to 6:00 p.m. on Monday through Friday for the 2012-2013 academic school year. Student participants in the LYP treatment group met for one full hour once weekly and engaged in a series of empirically supported positive psychology interventions designed to increase subjective well-being (SWB) through focusing on past, present, and prospective experiences. As an active component of the intervention, students in the LYP treatment group participated in a series of leadership and professional development exercises that included: (1) resume writing, (2) reviewing online college admissions requirements, and (3) exploring future career options. A detailed description of the LYP treatment group is included below.

Description of the LYP Treatment Group

The group of students that received the *Leadership and Young Professionals* (LYP) intervention in the fall to early spring semesters functioned as the treatment group in this randomized control trial study. The LYP program is a modular-based intervention designed for middle and high school-aged students who are near the age of considering their future options for post-secondary school and career choices, or those students still

seeking to qualify for a 2- or 4-year college before their high school graduation. To prepare for future academic and professional demands, the LYP intervention involves evidence-based strategies from previous research studies aimed at increasing adolescents' SWB, gratitude, and capacity to set achievable goals and manage potential obstacles to attaining these goals. Primary strategies of the LYP intervention involved individual and group activities focused on enhancing SWB, problem-solving skills, gratitude, character strengths, and other critical developmental assets. In addition, the LYP program assists in building effective interpersonal skills and helping to increase students' exposure to high school and college course requirements. Students who were randomly assigned to the LYP treatment group received all components of the intervention package outlined below.

Character Strengths Intervention. Students assigned to the LYP treatment group were asked to complete (with help from a mentor) the online *Revised Values in Action Inventory of Strengths for Youth* (VIA-Youth; Park & Peterson, 2006) to evaluate their top five signature character strengths. Upon completing the online VIA-Youth inventory, students discussed their character strengths in small groups and how they could use them in the future to increase success in school, careers, or other important aspects of their life. Over the school semester, students recorded in a notebook how they would use their character strengths in new and different ways to reach their short and long-term goals. These procedures were comparable to previous studies (Seligman et al., 2005; Weber & Ruch, 2012), which were designed to assist both adults and youth in discovering and utilizing their signature character strengths more frequently.

To complement this intervention strategy, students in the LYP treatment group explored new extracurricular activities and clubs to get involved in during high school and college to help generate curiosity for prospective (i.e., future) academic and social experiences. Students established and consistently revised a brief list of positive life goals to work towards over the next year aimed at increasing hope for future success in school. A more detailed description of the goal setting procedures is included below.

Gratitude Journaling, Letter Writing, and Contacts. Using a modified version of Froh and colleagues' (2008) intervention study, students in the LYP treatment group kept a gratitude journal during the semester. Participants first engaged in a group discussion on what gratitude (or being thankful) meant to them. Following this discussion, students were prompted to write individually for 15 minutes about what they felt most grateful, or thankful, for and describe positive experiences in their life.

The LYP treatment group received the following instructions before writing: "list up to five (5) or more things that you personally feel grateful, or thankful for, in the past week or more of your life." During each LYP session, students were given between 10 to 15 minutes to write individually about their blessings, positive experiences, and reasons that they felt grateful about life. After every writing period, students had the opportunity to share their positive experiences and feelings of gratitude with the rest of the group.

While maintaining a gratitude journal, students in the LYP treatment group also planned and drafted a brief letter of gratitude to someone in their life who had influenced them in a positive way. Students were instructed to write both a rough draft and final copy of their gratitude letter. After finalizing the gratitude letter, students were given the chance to present and read their letter aloud to the addressed person during a special pre-

arranged parent night event. Previous studies on gratitude have also incorporated similar research methods involving writing letters of gratitude and sharing it with someone important (Seligman et al., 2005; Toepfer et al., 2012).

Goal Setting and Attainment Scaling. The current intervention study involved a comprehensive evaluation of each student participant's individual capacity to generate, manage, and work towards attaining personally selected goals (e.g. related to academic and career development) over the semester-long intervention. Several factors of goal setting theory (Latham & Locke, 2002; Locke et al., 1981) were integrated into the intervention study and evaluated on the theoretical-based standards of human motivation. Previous research on human motivation and goal setting provided considerable evidence that people who set more *challenging* and *specific* goals have higher ratings of work performance and self-efficacy (Locke, 1996). During the first two weeks, participants in the LYP treatment group selected between one to three short-term goals to work towards achieving over the school semester.

During the school semester, trained college-aged mentors helped to guide youth in generating and monitoring their progress towards reaching social, academic, and health-related goals. Collaboratively, youth and their assigned mentors established short and long-term goals aimed to enhance students' future academic and career outcomes. Students in the intervention group tracked their progress throughout the semester with support from mentors using goal attainment scaling. In addition to progress monitoring, participants identified potential barriers and possible solutions to achieving goals.

Students worked with their assigned college mentor to revise their personal goals using the *SMART* goal setting method. The *SMART* goals acronym stands for S-Specific,

M-Measurable, A-Achievable, R-Relevant, and T-Timely. *SMART* goal-setting strategies have been utilized in governmental settings and are now helping educators in evaluating their instructional processes and programs (O'Neill, 2000). Using a *SMART* goal setting protocol, students listed each individual goal and up to five strategies, or plans of action, they would use to accomplish their self-set goals. Student self-report measures on the standard goal setting protocol allowed each student to provide self-ratings for the three following criteria about their goals on a 10-point *Likert* scale: (1) *specificity,* (2) *level of difficulty (challenging), and* (3) *personal commitment*. To briefly summarize, students in the LYP treatment group engaged in setting *SMART* goal setting with weekly assistance from college mentors and monitored their overall progress towards attaining these goals throughout the intervention period (i.e., one full school semester).

Social Problem-Solving Skills. The LYP treatment condition also integrated social problem-solving skills training as a method of increasing SWB through focusing on *present and prospective* (i.e., future) experiences. Students in the LYP intervention group participated in a series of school and career related problem-solving scenarios that involved extended opportunities for hands-on, experiential learning to help apply positive social skills in group-based settings. Using the *6 Steps Method of Problem Solving*, small self-selected groups of three to five students worked together to prepare a brief skit (e.g., role-playing scenario) illustrating how to resolve the identified school or career-focused problem. After each skit had been performed, the group as a whole discussed how well the problem scenario was handled and if there were other plausible solutions.

The *6 Steps of Problem-Solving* have been effectively incorporated by research-practitioners in diverse fields of scientific study (Cottrell & Eisenberg, 2001; Eisenberg

& Berkowitz, 2000). As described above, problem-solving skills interventions used with adults have been shown to increase levels of life satisfaction and positive affect (i.e., two critical components of SWB) through enhancing a person's self-efficacy and perceived control over life circumstances (Ayres & Malouff, 2007). Therefore, the current study focused on improving youths' SWB and perceived levels of social self-efficacy through both role-playing and discussing specific problems that are frequently encountered in real world and school-based settings.

Leadership and Professional Development Exercises. In addition to the above described positive psychology interventions, students in the LYP treatment group took part in a series of leadership and professional development exercises. These exercises focused mainly on enhancing students' knowledge of high school, college, and career-based topics. Students in the LYP treatment group reviewed future options for high school courses and extracurricular activities that related to their personal interests and character strengths. Moreover, students were instructed on how to write a professional resume, apply for college admissions, fill out financial aid applications and explore their future career choices. Students worked in small groups of 4 to 5 students with guidance from a college-aged mentor to explore careers, construct a resume, fill out career interest surveys, and register online for access to *College Board* resources. Finally, participants maintained a working portfolio to include all of their personal work and accomplishments throughout the semester and additional information they received from career surveys and college admissions websites.

Summary and Logic Model

Strength-based, positive psychology interventions have demonstrated some initial empirical support for improving critical outcomes related to positive youth development. Unfortunately, most studies thus far have been one-dimensional and focused mainly on enhancing a single factor such as subjective well-being (SWB) or gratitude. Our preliminary research suggests that a two-week long summer intervention that consists of a series of evidence-based positive psychology interventions and professional development exercises can lead to increases in SWB, gratitude, and social self-efficacy (Bird, Smith, & Lyons, under review). This multi-modal intervention appears to have produced larger effect sizes than the uni-modal intervention approaches (Bird et al., under review). Some likely mechanisms of action of the combined intervention approach (i.e., the LYP intervention) are summarized in the logic model presented in Table 2 below. Table 2 also includes time estimates for each component of the LYP intervention across the ten total sessions (which included 75 minutes per session for a total of 750 minutes).

Table 3.2. Logic Model for LYP Intervention

	Inputs	Activities	Outputs	Outcomes	Time
Academic-Based Mentoring	Exposure to a supportive young adult role model	Trained college mentors helped students complete activities	Relationship promotes positive youth development	Higher grades, subjective well being (SWB), and student engagement	Provided for all activities during each LYP session
Academic Enabling (Executive Skills Training)	Training in organization and time management skills	Organization of school agendas, materials, backpacks, and lockers	Fewer missed assignments, and increased preparation for class	Higher grades, engagement and academic competence	75 min. for one session
Learning How to Use Your Character Strengths	Identifying and using character strengths in new and	Take survey and brainstorm how to apply new	Increased use and knowledge of positive character	Enhanced SWB, student engagement, and social	150 min. for two sessions

	different ways	character strengths	strengths	self-efficacy	
Goal Setting Activities	Training in Goal Setting and Progress Monitoring	Learning to set SMART goals (i.e., specific measurable, realistic), and track progress	Improvement in areas targeted for goals either school, social, or health-based	Improved well-being, positive behavior, and academic performance	150 min. across two sessions (Progress tracked in CHP program)
Gratitude and Positive Experience Journaling	Counting one's blessings and positive experiences on a weekly basis	Maintaining a weekly journal of positive experiences and blessings	Increased focus and awareness of blessings and positive experiences	Increased SWB and self-report of gratitude	150 min. across two sessions
Gratitude Letter Writing	Letter writing and preparation of personal delivery	Writing a letter of gratitude to a family member or benefactor	Improved letter writing skills and prosocial behaviors	Increased SWB and self-report of gratitude	75 min. across one session
Social Problem Solving Skills (i.e. Role-Play Scenarios)	Group training in 6 steps of problem solving and how to use in new settings	Weekly group role-playing scenarios and discussions on possible solutions	Less social anxiety and improvements in readiness for high school	Increased social self-efficacy and student engagement	150 min. across two sessions

CHAPTER 4

RESULTS

Treatment Fidelity of the LYP Intervention

To evaluate the overall fidelity of the LYP intervention within an after-school program, an implementation checklist was used for each session. The first author and trained CHP senior staff members followed a standardized protocol for each treatment module including gratitude exercises, personal goal setting, character strengths building, social problem solving skills, and professional development activities. Across all of the LYP modules, a 90% treatment fidelity goal was established and successfully met. Only students who participated in at least 80% of the LYP intervention over the course of the semester were included in the study's analyses of treatment effects.

The quality and fidelity of material delivered, other than content checklists, was not assessed in this study. Using content checklists for each session, about 95% of the LYP intervention content was delivered to the 86 out of 93 students (92%). One of the LYP sessions involving development of character strengths was reduced in half due to time constraints, thus leading to a small decrease in the overall amount of material delivered. All group sessions were timed and maintained at approximately 75 minutes given the schedule and organization of activities for the after school program.

Data Analysis Plan

Research hypotheses were addressed using a repeated measures design with eligible participants' results from both the treatment and wait list control group compared

at two points in time. Self-report (i.e., subjective) ratings and staff-rated after school performance were collected in September 2012 (Time 1) and February 2013 (Time 2). In addition, students' first quarter grades (October 2012) were compared with their second quarter grades (January 2013). This data collection resulted in some missing data, with missing rates ranging from 5% to 17% depending on the measure. Missing data were treated using multiple imputation, which has been shown to be an acceptable method for data missing at random or missing completely at random (Scheffer, 2002; Sinharay, Stern, & Russell, 2001). Multiple imputation was conducted by imputing values based on regression weights for all dependent variables (DV) in the study prior to performing regression analyses.

Tests of Distributional Assumptions

Preliminary analyses were conducted prior to evaluating the research questions in order to examine distributional assumptions and to check for outliers. Data were entered twice and errors were corrected to eliminate data entry errors. Descriptive and inferential statistics were calculated for group differences at baseline. The descriptive statistics included univariate statistics, which were examined for potential outliers or serious violations of major distributional assumptions for inferential statistics. Another descriptive statistic was calculating Cohen's *d* for group differences at Time 1. Inferential statistics for group differences at Time 1 were *t*-tests and Chi-square tests.

Table 3 below displays distribution information (i.e., mean, median, standard deviation, skewness, and kurtosis) for all outcome and predictor variables at baseline (Time 1). Evidence from skewness and kurtosis generally suggests that baseline (pre-test) scores for each group were normally distributed. Curran, West, and Finch (1996)

suggest that skewness values less than 2 and kurtosis values less than 7 can be accepted to be within the cut-off for normal distribution. The only outcome variables that were in violation of these distributional assumptions were life satisfaction (S=-2.22, K=7.41) and social self-efficacy (S=-2.03) for the control group at baseline. Plots of outcome residuals demonstrated that errors were reasonably independent of each other; therefore, this important statistical assumption was not seriously violated. In addition, histograms of model residuals all approached normality, including both subjective (i.e., self-report) and objective measures of the study.

Table 4.1. Descriptive Statistics and Internal Consistency for the LYP Treatment Group and Control Group at Baseline (Time 1).

	Treatment Group					**Control Group**				
Predictor Variables	***M***	***Mdn***	***SD***	***S***	***K***	***M***	***Mdn***	***SD***	***S***	***K***
Life Satisfaction	5.21	5.17	1.13	-0.49	-0.55	6.01	6.17	0.88	-2.22	7.41
Positive Affect	3.79	3.83	0.70	-0.49	-0.29	4.17	4.33	0.64	-0.78	-0.37
Negative Affect	2.24	2.20	0.69	0.46	-0.15	1.97	1.80	0.70	1.05	0.64
Subjective Well-Being (SWB)	6.76	6.93	1.83	-0.44	-0.28	8.21	8.23	1.77	-1.90	5.97
Gratitude	5.52	5.67	1.01	-1.17	1.99	5.82	6.00	1.00	-0.95	0.44
Teacher-Student Relationships	3.01	3.11	0.61	-0.53	-0.60	2.92	2.89	0.69	-0.33	-0.95
Control and Relevance of School Work	3.11	3.11	0.43	-0.18	-0.78	3.39	3.44	0.40	-0.49	-0.44
Peer Support for Learning	3.12	3.33	0.60	-0.44	-0.67	3.50	3.50	0.47	-1.28	1.47
Future Aspirations and Goals	3.58	3.80	0.52	-1.15	0.14	3.79	3.80	0.27	-1.15	0.34
Family Support for Learning	3.35	3.25	0.53	-0.65	-0.16	3.61	3.75	0.49	-1.69	3.40
Self-Efficacy for Academic Achievement	7.17	7.22	1.93	-0.52	-0.29	8.18	8.33	1.43	-0.80	0.00
Self-Efficacy for Self-Regulated Learning	6.80	6.80	1.57	0.01	-1.00	7.89	8.20	1.70	-0.82	0.01

Social Self-Efficacy	7.65	8.00	2.07	-0.82	-0.30	8.42	9.00	2.01	-2.03	5.09
Math Grades (Q1)	80.07	81.00	9.28	0.09	-1.23	83.73	87.00	9.20	-0.71	-0.35
English Grades (Q1)	80.80	81.00	7.49	-0.10	-0.74	82.23	82.00	7.28	-0.10	-0.61
Science Grades (Q1)	77.59	77.00	10.20	0.09	-0.66	81.42	82.50	8.13	-0.11	-1.19
Social Studies Grades (Q1)	82.90	85.00	9.67	-0.56	-0.79	82.22	83.00	8.80	-0.32	-0.35
Academic Competence	1.97	2.00	0.77	0.58	-0.81	2.07	2.00	0.72	0.40	-0.74
Interpersonal Competence	1.79	1.60	0.72	0.88	-0.02	1.80	1.60	0.71	0.69	-0.55

Note. N= 86
Note. Means (M) and Standard Deviations (SD) for Predictor Variables at Time 1
Note. Mdn= Median; S= Skewness; K= Kurtosis

Baseline Group Differences

Demographic characteristics (i.e., gender, grade level, and race/ethnicity) for the two group conditions, as well as the total sample, were analyzed. Chi-square tests were conducted to determine if any demographic variables were differentially represented in the two groups. These test results found no significant differences in the distributions of gender, grade level, and race/ethnicity. However, results from Chi-square tests should be interpreted with some caution due to the small sample size of the study. The power to detect a small effect for gender was estimated to be 0.46, the estimate for grade level was 0.36, and the estimate for race/ethnicity was 0.31. Students' demographic variables (i.e., gender, grade level, and race/ethnicity), group mean differences at baseline, and results from initial Chi-square and *t*-tests are included in Table 4.

Table 4.2. Demographic and Predictor Variables and Chi-square (and T-test) Results at Baseline (Time 1)

Demographic Variables	**LYP Treatment Mean (SD)**	**Control Group Mean (SD)**	***χ^2 or t-value***	***p-value***
Gender (Male %)	46.51	60.47	1.70	0.20
Grade	6.74 (0.73)	6.88 (0.79)	1.10	0.60
Race/Ethnicity (Black %)	83.72	86.05	0.16	1.00

Predictor Variables	LYP Treatment Mean (SD)	Control Group Mean (SD)	Effect Size (Cohen's *d*)	*p-value*
Life Satisfaction	5.21 (1.13)	6.01 (0.88)	0.79	<.001*
Positive Affect	3.79 (0.70)	4.17 (0.64)	0.57	0.01*
Negative Affect	2.24 (0.69)	1.97 (0.70)	0.39	0.09
Subjective Well-Being	6.76 (1.83)	8.21 (1.77)	0.81	<.001*
Gratitude	5.52 (1.01)	5.82 (1.00)	0.30	0.19
Teacher-Student Relationships	2.90 (0.65)	3.13 (0.59)	0.37	0.11
Control and Relevance of School Work	3.11 (0.43)	3.39 (0.40)	0.67	.003*
Peer Support for Learning	3.12 (0.60)	3.50 (0.47)	0.71	.002*
Future Aspirations and Goals	3.58 (0.52)	3.79 (0.27)	0.51	0.03*
Family Support for Learning	3.35 (0.53)	3.61 (0.49)	0.51	0.03*
Self-Efficacy for Academic Achievement	7.17 (1.93)	8.18 (1.43)	0.59	0.01*
Self-Efficacy for Self-Regulated Learning	6.80 (1.57)	7.89 (1.70)	0.67	.004*
Social Self-Efficacy	7.65 (2.07)	8.42 (2.01)	0.38	0.10
Math Grades (Quarter 1)	80.07 (9.28)	83.73 (9.20)	0.40	0.09
English Grades (Quarter 1)	80.80 (7.49)	82.23 (7.28)	0.19	0.41
Science Grades (Quarter 1)	77.59 (10.20)	81.42 (8.13)	0.42	0.07
Social Studies Grades (Quarter 1)	82.90 (9.67)	82.22 (8.80)	0.07	0.75
Academic Competence	1.97 (0.77)	2.07 (0.72)	0.13	0.52
Interpersonal Competence	1.79 (0.72)	1.80 (0.71)	0.01	0.95

Note. N=86
Note. Means and Standard Deviations (SD) for Predictor Variables at Time 1
*Note. p < .05**

T-tests were used to examine group differences on the measures at baseline (see Table 4). For these tests, a post hoc power analysis was conducted using *G* Power 3.1* online software (Faul, Erdfelder, Lang, & Buchner, 2009; Faul et al., 2007). *G* Power 3.1* was utilized for a two-tailed *t*-test for linear multiple regression, using a fixed model and single regression coefficient to estimate the power needed to detect baseline (pre-test) group differences. With our sample size (*N*=86), the power to detect a small effect (Cohen's *d*= .2) was estimated to be 0.98. As a result, power was considered to be high to detect small effects. Significant group differences at baseline (pre-test) were found for 9 of the 19 measures despite randomly assigning participants to the two groups (see Table

4). Based on Cohen's *d* for significant group differences at baseline (pre-test), effect size calculations ranged from 0.01 to 0.81 with a mean of 0.45.

Finally, a two-way multivariate analysis of variance (MANOVA) was conducted to determine whether or not there were significant differences in baseline levels of the predictor variables across gender. A post hoc power analysis was conducted using *G* Power 3.1* with an *F*-test for global effects. With the small sample size (*N*=86), the power to detect a small effect (f^2) was estimated to be 0.08, and power for a medium effect was estimated to be 0.45. As a result, power was considered to be insufficient to detect small and medium effects. Test results from a two-way MANOVA indicated that there was no significant differences for gender across the baseline (pre-test) levels of the predictor variables in the study, $F(1, 83) = 1.5$, $p = 0.12$, Pillai = 0.326.

Analysis of Intervention Effects

The primary inference for intervention effects was based on group by baseline level of the dependent variable interactions. Accordingly, *G* Power 3* was utilized for linear multiple regression, with fixed group differences to estimate the power needed to detect interaction effects. With our small sample size (*N*=86), the power to detect a small effect (Cohen's *d*= .2) was estimated to be 0.35 and the power to detect a medium effect (Cohen's *d*= .5) was estimated to be 0.99. Based on effect sizes of master's thesis data, which ranged from 0.22 to 1.33 with a mean of 0.82 (Bird, 2012), I anticipated at least medium sized between group differences on many of the variables.

Previous research (Bonate, 2000; Dimitrov & Rumrill, 2003) indicates that using the general linear model (GLM), with pre-test scores as the covariate, is the preferred method for evaluating pre-post measurement designs as it has been shown to reduce error

variance and systematic bias that may exist by more implicitly accounting for regression towards the mean. Also, the conceptual replication of positive psychology intervention components in the current study with previous research was taken into consideration; therefore, analyses by Emmons and McCullough (2003) and Froh et al. (2008) were used as a guide.

Based on preliminary data analysis, inferential statistics to examine intervention effects were conducted using the general linear model (GLM) to control for baseline differences in the two groups. The baseline level of the dependent variable (DV) was entered into the GLM model in order to calculate simple regressions to predict the Time 2 level of the DV. In addition, the group (LYP treatment and wait list control groups) by baseline (pre-test) level of the DV interaction was entered to test for a possible moderating effect of baseline differences in the DV. A series of simple regression models were used to determine if there was a significant main effect or if an interaction was present between the two group conditions (LYP treatment and wait list control groups) and baseline (pre-test) levels for SWB (i.e., life satisfaction, positive affect, and negative affect) gratitude, factors of student engagement, factors of perceived self-efficacy, school grades, academic competence, and interpersonal competence. In the simple regression models, group conditions served as the between-subjects factor, and baseline pre-test scores as the continuous predictor variable (Time 1).

To examine the direction and magnitude of treatment effects, effect size (i.e., adjusted Cohen's *d*) estimates were calculated for the main effects of the intervention. The adjusted Cohen's *d* was calculated by subtracting the Cohen's *d* at Time 1 from Cohen's *d* at Time 2. Consistent with the recommendations of Shadish, Cook, and

Campbell (2002), to further interpret effects and potential confounds, we examined graphs of the pre- and post-test intervention means for the two group conditions. In keeping with the recommendation of Cohen (1990), we also provide 80% confidence intervals around the control group means to guide interpretation of the graphed means.

Hypothesis #1- Treatment Effects on Subjective (or Self-Report) Measures

Treatment Effects on Life Satisfaction. When controlling for baseline (pre-test) scores, test results indicated a large and statistically significant main effect of the LYP treatment on life satisfaction (LS), $t(83) = 4.68$, $p < .001$, $d = 0.97$. As shown in Figure 1, the LYP treatment group reported significantly lower levels of LS in comparison to the control group at baseline (Time 1). As judged by inspection of the 80% confidence interval (see Figure 1), the control group's LS did not change significantly, and there appears to be little difference between the two groups at the end of the intervention period (Time 2). Thus, the LYP group appeared to "catch up" with the control group.

Further analyses also indicated a significant interaction (Group x baseline level of life satisfaction) effect for the outcome variable of life satisfaction, $t(83) = -4.71$, $p < .001$ when controlling for baseline group differences. These results suggest that baseline levels of LS may have moderated treatment effects on LS. This finding serves as a potential confound when interpreting the positive impact of the LYP treatment on students' life satisfaction. Thus, in addition to being a potential treatment effect on LS, the pattern of results is consistent with an instrumentation by time or a selection by time confound. Results for life satisfaction should be interpreted with some caution due to significant group differences at baseline (pre-test) measurement of life satisfaction.

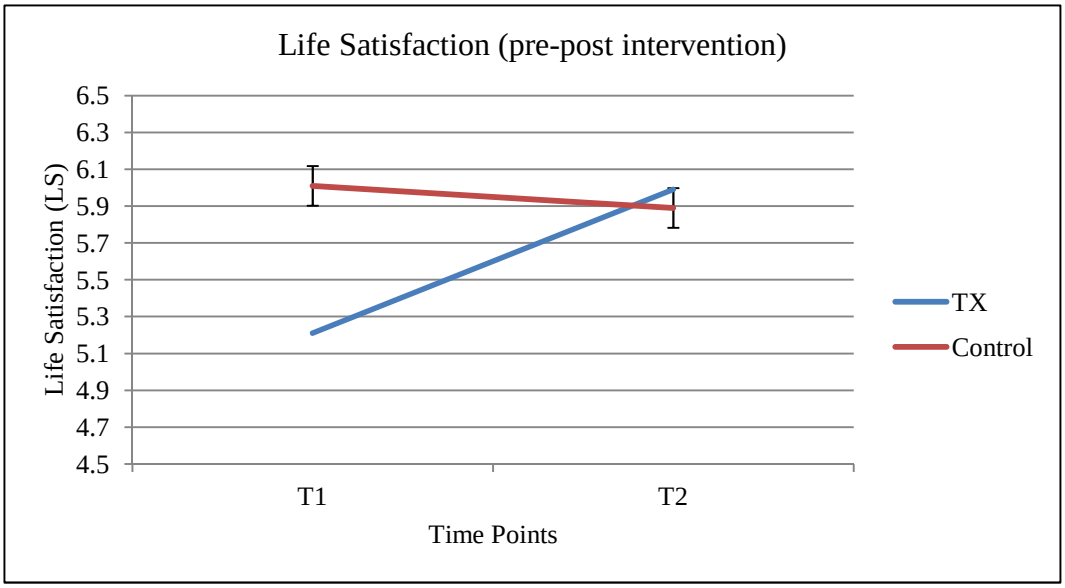

Figure 4.1. *Group mean differences for life satisfaction (LS) from pre- to post-test before adjusting for baseline (pre-test) scores.*

Test results and estimates for the regression model for life satisfaction (LS) can be found in Table 5 below.

Table 4.3. Predictors of positive change for the LYP treatment group on Life Satisfaction

Test results for multiple regression				
Predictor	Estimate	Standard error	T-value	P-value
(Intercept)	5.49	0.11	50.47	0.001*
Life Satisfaction (T1 centered)	0.97	0.10	9.37	0.001*
Treatment (Tx)	0.65	0.14	4.68	0.001*
Interaction Effect (T1 centered*Tx)	-0.59	0.13	-4.71	0.001*

Note. $N = 70$. *p < .001

Treatment Effects on Positive Affect. The predicted main effect for the LYP treatment on students' positive affect was not found to be statistically significant, $t(83) = -0.66$, $p = 0.51$, $d = 0.20$. As shown in Figure 2 below, the LYP treatment group reported significantly lower levels of PA in comparison to the control group at baseline (Time 1). Figure 2 illustrates an increase in both group means from baseline to post-intervention (Time 2) for PA with the slope of the LYP treatment group being slightly greater than the slope of the control group before adjusting for baseline (pre-test) scores. Additional

regression analyses revealed that the interaction term was also not significant, $t(83) = 0.71$, $p = 0.48$. Although there is a slight increase in PA, the LYP intervention did not appear to have a significant impact on students' levels of PA at the $p < .05$ level of significance.

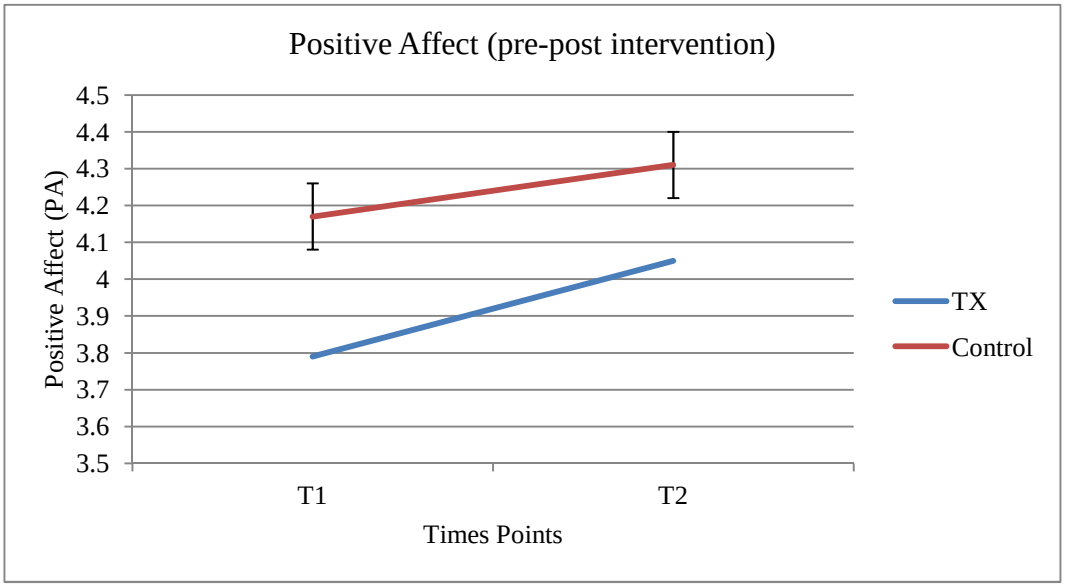

Figure 4.2. *Group mean differences for positive affect (PA) from pre- to post-test before adjusting for baseline (pre-test) scores*

Test results and estimates for the regression model for positive affect can be found in Table 6 below.

Table 4.4. Predictors of change for the LYP treatment group on Positive Affect

Test results for multiple regression				
Predictor	Estimate	Standard error	T-value	P-value
(Intercept)	4.20	0.11	38.92	0.001*
Positive Affect (T1 centered)	0.41	0.15	2.66	0.01*
Treatment (Tx)	-0.09	0.14	-0.66	0.51
Interaction Effect (T1 centered*Tx)	0.14	0.20	0.71	0.48

Note. $N = 70$. *p < .001

Treatment Effects on Negative Affect. The pattern of results for negative affect was similar to those reported for life satisfaction. Test results indicated a moderate sized, statistically significant main effect of the LYP treatment on negative affect, $t(83) = -0.50$,

p <.001, d = 0.39. Figure 3 below illustrates a decrease in the group mean for the LYP treatment from pre- to post-intervention. Students assigned to the LYP treatment group reported higher levels of negative affect at baseline and lower levels of negative affect at post-intervention when compared to the group means for the wait list control group. In this case, there is a "catch up" effect with the treatment group starting out with higher negative affect and then moving towards equivalent levels of negative affect compared to the control group at post-intervention.

Further regression analyses also indicated a statistically significant interaction (Group x baseline level of negative affect) for negative affect, $t(83) = -1.46$, $p < .001$. Once again, this suggests that baseline (pre-test) levels of negative affect may have moderated treatment effects on negative affect.

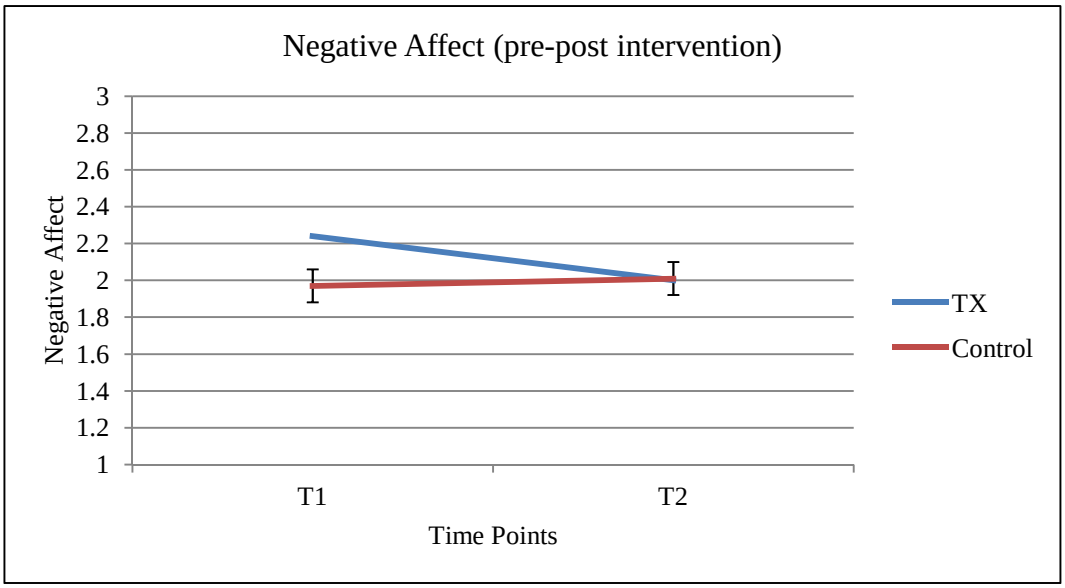

Figure 4.3. *Group mean differences for negative affect (NA) from pre- to post-test before adjusting for baseline (pre-test) scores.*

Table 7 below includes test results and estimates for the regression model for negative affect (NA) using the adjusted group means with Time 1 scores centered at the mean (x=0).

Table 4.5. Predictors of positive change for the LYP treatment group on Negative Affect

Test results for multiple regression				
Predictor	Estimate	Standard error	T-value	P-value
(Intercept)	2.03	0.11	17.72	0.001*
Negative Affect (T1 centered)	0.61	0.15	4.05	0.001*
Treatment (Tx)	-0.07	0.15	-0.50	0.001*
Interaction Effect (T1 centered*Tx)	-0.29	0.20	-1.46	0.001*

Note. $N = 70$. *p < .001

Treatment Effects on Subjective Well-Being (SWB). To calculate students' SWB, we used statistical methods from previous models (Diener, Suh, Lucas, & Smith, 1999), which theorize, *SWB = Life Satisfaction (LS) + Positive Affect (PA) – Negative Affect (NA).* Each variable (i.e., LS, PA, and NA) was first standardized before being combined to calculate participants' overall SWB. The predicted main effect of the LYP treatment group on SWB was found to be large and statistically significant, $t(83) = 2.43$, $p < .001$, $d = 1.27$. As illustrated in Figure 4 below, there is an increase in the group mean for the LYP treatment from pre- to post-intervention time points. Students assigned to the LYP treatment reported lower levels of SWB at baseline when compared to the group means for the wait list control group.

Test results also indicated a significant interaction (Group x baseline level of SWB) for SWB, $t(83) = -2.51$, $p < .001$. In this case, there is a "catch up" effect with the LYP treatment group starting out with lower SWB and moving towards equivalent levels of SWB compared to the control group at Time 2. This effect is open to multiple threats to internal validity, such as regression towards the mean. However, in the context of the pattern of results, there is some evidence to suggest that the LYP treatment did in fact have an influence on enhancing adolescents' SWB from baseline to post-intervention; but these results should be interpreted with caution.

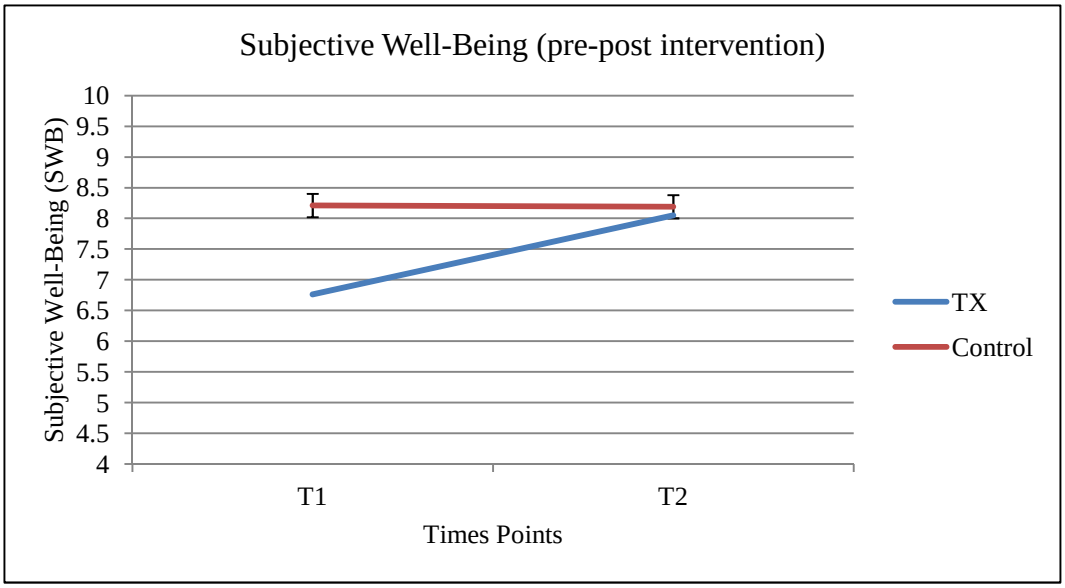

Figure 4.4. *Group mean differences for subjective well-being (SWB) from pre- to post-test before adjusting for baseline (pre-test) scores*

Table 8 below summarizes the test results and estimates of the regression model for SWB when controlling for baseline (pre-test) scores.

Table 4.6. Predictor of positive change for the LYP treatment group on Subjective Well-Being (SWB)

Test results for multiple regression				
Predictor	Estimate	Standard error	T-value	P-value
(Intercept)	-0.31	0.14	-2.23	0.001*
SWB (T1 centered)	0.91	0.13	7.22	0.001*
Treatment (Tx)	0.43	0.18	2.43	0.001*
Interaction Effect (T1 centered*Tx)	-0.42	0.17	-2.51	0.001*

Note. $N = 70$. *p < .001

Treatment Effects on Gratitude. From regression analyses, test results confirmed that there was a large and significant predicted main effect of the LYP treatment group on participants' gratitude, $t(83) = 2.33$, $p = .02$, $d = 0.79$. Likewise, Figure 5 below shows the group means, with the difference at post-intervention indicating the presence of a significant intervention effect with a crossover pattern. Additional regression analyses revealed that the interaction term (Group x Baseline level of gratitude) for gratitude was not significant, $t(83) = 0.09$, $p = 0.93$.

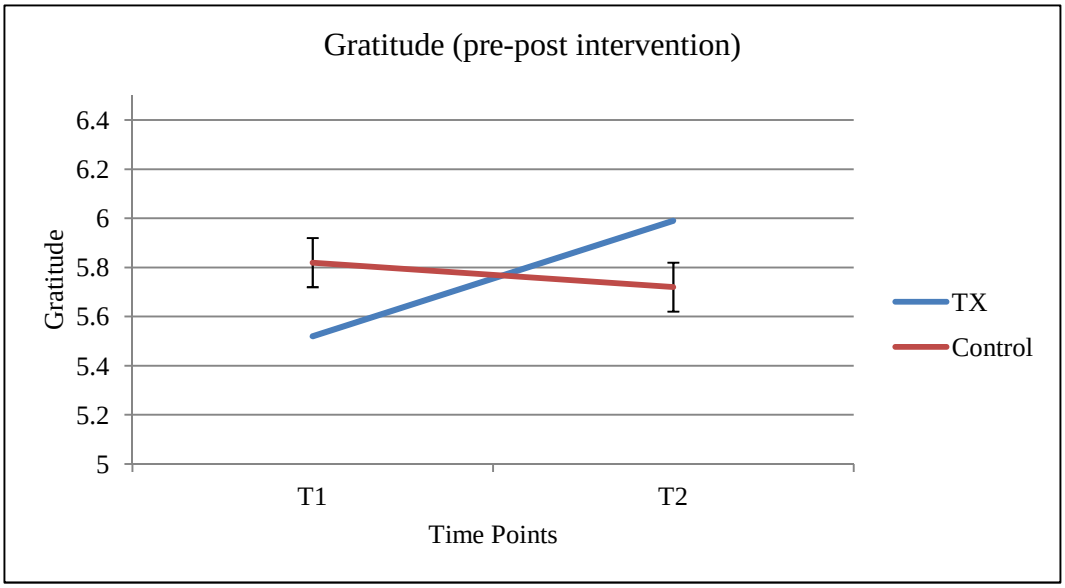

Figure 4.5. *Group mean differences for gratitude from pre- to post-test before adjusting for baseline (pre-test) scores.*

From these results, it appears that the LYP treatment did in fact have a positive influence on adolescents' gratitude overtime regardless of group differences in the baseline level of gratitude. Test results and estimates of the treatment effect on gratitude when controlling for baseline (pre-test) scores are included in Table 9 below.

Table 4.7. Predictor of positive change for the LYP treatment group on Gratitude

Test results for multiple regression				
Predictor	Estimate	Standard error	T-value	P-value
(Intercept)	5.65	0.13	44.59	0.001*
Gratitude (T1 centered)	0.30	0.14	2.15	0.03*
Treatment (Tx)	0.38	0.16	2.33	0.02*
Interaction Effect (T1 centered*Tx)	0.02	0.17	0.09	0.93

Note. $N = 70$. *p < .05

Treatment Effects on Student Engagement. Test results indicated a moderate, significant main effect of the LYP treatment on teacher-student relationships, $t(83) = 2.09$, $p < .001$, $d = 0.49$. Group means for the two conditions (see Figure 6 below) show a disordinal pattern with the LYP treatment group increasing while the control group decreased from baseline to post-intervention.

Additional analyses also indicated a significant interaction (Group x baseline level of teacher-student relationships) for teacher-student relationships, $t(83)$, = -0.92, $p <$ .001. These results suggest that baseline levels of teacher-student relationships may have moderated treatment effects on teacher-student relationships. Thus, in addition to being a potential treatment effect on teacher-student relationships, the pattern of results is also consistent with an instrumentation by time or a selection by time confound.

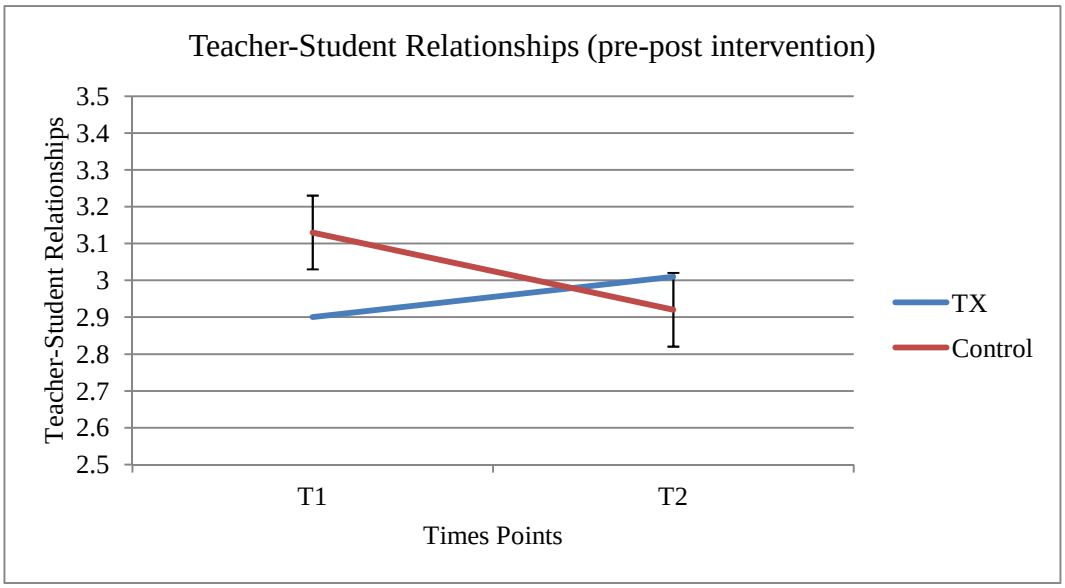

Figure 4.6. *Group mean differences for teacher-student relationships from pre- to post-test before adjusting for baseline (pre-test) scores.*

Table 10 below summarizes the test results and estimates for the regression model for teacher-student relationships when controlling for baseline (pre-test) scores.

Table 4.8. Predictor of positive change for the LYP treatment on Teacher-Student Relationships (Student Engagement)

Test results for multiple regression				
Predictor	Estimate	Standard error	T-value	P-value
(Intercept)	2.78	0.10	28.49	0.001*
Teacher-Student Relationships (T1 centered)	0.78	0.15	5.07	0.001*
Treatment (Tx)	0.26	0.13	2.09	0.001*
Interaction Effect (T1 centered*Tx)	-0.18	0.20	-0.92	0.001*

Note. N = 70. *p < .001

The predicted main effect of the LYP treatment on students' control and relevance of school work was not found to be statistically significant, $t(83) = 0.25$, $p = 0.80$, $d = 0.33$. As illustrated in Figure 7 below, the LYP treatment group reported significantly lower levels of control and relevance of school work at baseline (Time 1). Figure 7 shows a slight increase in the LYP treatment group and a decrease in the control group from baseline to post-intervention (Time 2). Further regression analyses indicated that the interaction term (Group x Baseline levels of control and relevance of school work) was not significant, $t(83) = 0.70$, $p = 0.49$.

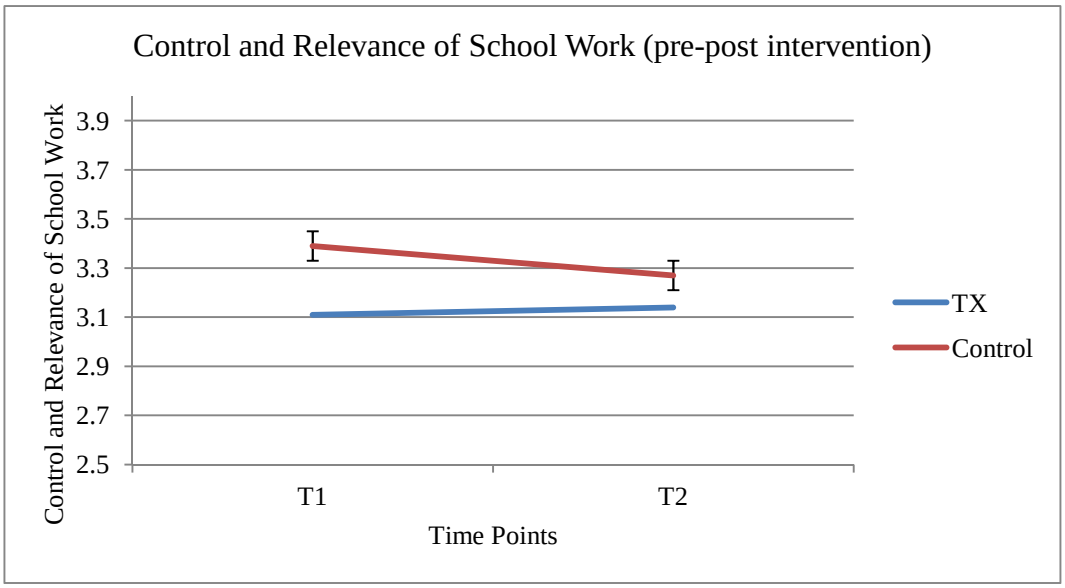

Figure 4.7. *Group mean differences for control and relevance of school work from pre- to post-test before adjusting for baseline (pre-test) scores.*

Table 11 below summarizes the test results and estimates for the regression model for control and relevance of school work when controlling for baseline (pre-test) scores.

Table 4.9. Predictor of change for the LYP treatment group on Control and Relevance of School Work (Student Engagement)

Test results for multiple regression				
Predictor	Estimate	Standard error	T-value	P-value
(Intercept)	3.19	0.07	43.12	0.001*
Control and Relevance of School	0.51	0.17	3.04	0.002*

Work (T1 centered)				
Treatment (Tx)	0.02	0.10	0.25	0.80
Interaction Effect (T1 centered*Tx)	0.15	0.22	0.70	0.49

Note. $N = 70$. *p < .001

The predicted main effect for the LYP treatment on students' peer support for learning was also not statistically significant, $t(83)$, = -1.50, $p = 0.13$, $d = 0.10$. In Figure 8 below, the LYP treatment group reported significantly lower levels of peer support for learning at baseline (Time 1). Figure 8 also illustrates that the LYP treatment group remained exactly the same while the control group slightly decreased from baseline to post-intervention. Further regression analyses indicated that the interaction term (Group x Baseline levels of peer support for learning) was not significant, $t(83) = -0.21$, $p = 0.83$.

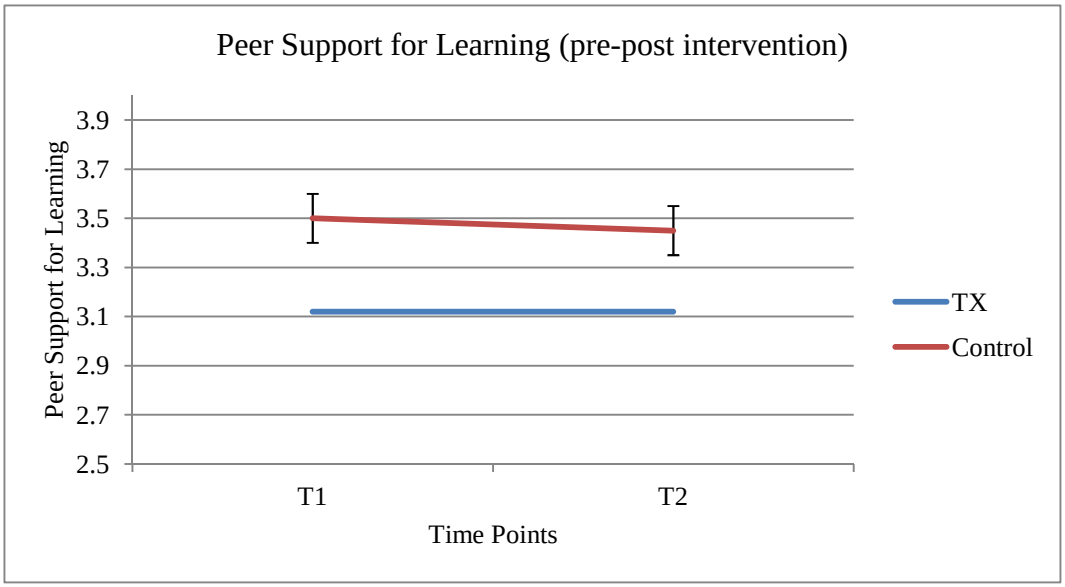

Figure 4.8. *Group mean differences for peer support for learning from pre- to post-test before adjusting for baseline (pre-test) scores.*

Table 12 below summarizes the test results and estimates for the regression model for peer support for learning when controlling for baseline (pre-test) scores.

Table 4.10. Predictor of change for the LYP treatment group on Peer Support for Learning (Student Engagement)

Test results for multiple regression

Predictor	Estimate	Standard error	T-value	P-value
(Intercept)	3.35	0.09	38.53	0.001*
Peer Support for Learning (T1 centered)	0.46	0.16	2.84	0.004*
Treatment (Tx)	-0.17	0.11	-1.50	0.13
Interaction Effect (T1 centered*Tx)	-0.04	0.19	-0.21	0.83

Note. $N = 70$. *p < .001

The predicted main effect for the LYP treatment on students' future aspirations and goals was also not statistically significant, $t(83), = 0.17$, $p = 0.87$, $d = 0.40$. In Figure 9 below, the LYP treatment group reported significantly lower levels of future aspirations and goals at baseline (Time 1). Figure 9 also shows that the LYP treatment group made a slight increase while the control group slightly decreased as the groups moved towards equivalence from baseline to post-intervention. Further regression analyses indicated that the interaction term (Group x Baseline levels of future aspirations and goals) was also not significant, $t(83) = -0.18$, $p = 0.86$.

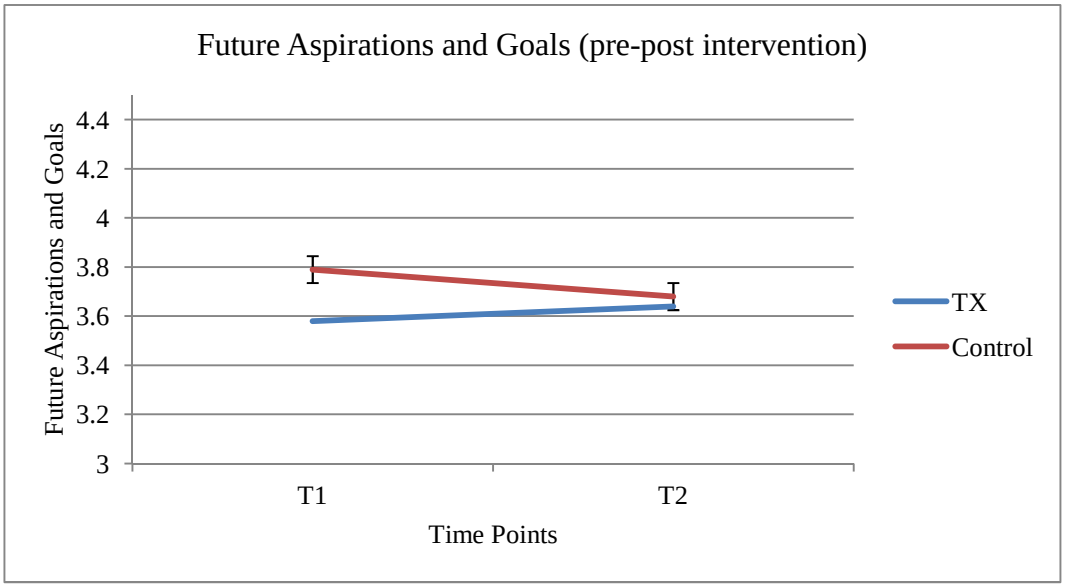

Figure 4.9. *Group mean differences for future aspirations and goals from pre- to post-test before adjusting for baseline (pre-test) scores.*

Table 13 below summarizes the test results and estimates for the regression model for future aspirations and goals when controlling for baseline (pre-test) scores.

Table 4.11. Predictor of change for the LYP treatment group on Future Aspirations and Goals (Student Engagement)

Test results for multiple regression				
Predictor	Estimate	Standard error	T-value	P-value
(Intercept)	3.66	0.08	45.51	0.001*
Future Aspirations and Goals (T1 centered)	0.39	0.27	1.46	0.14
Treatment (Tx)	0.02	0.10	0.17	0.87
Interaction Effect (T1 centered*Tx)	-0.05	0.30	-0.18	0.86

Note. $N = 70$. *p < .001

Finally, the predicted main effect for the LYP treatment on students' family support for learning was not statistically significant, $t(83)$, = -0.19, $p = 0.85$, $d = 0.17$. In Figure 10 below, the LYP treatment group reported significantly lower levels of family support for learning at baseline (Time 1). Figure 10 illustrates that the LYP treatment group stayed exactly the same while the control group slightly decreased from baseline to post-intervention.

Further regression analyses indicated that the interaction term (Group x Baseline levels of family support for learning) was also not significant, $t(83) = 0.65$, $p = 0.51$. These test results indicate that the baseline levels of family support for learning did not moderate the treatment effect on students' family support for learning at post-intervention. Overall, there appears to be no effect of the LYP treatment on students' family support for learning. This may be due in part to the lack of emphasis in the LYP intervention on family support for learning.

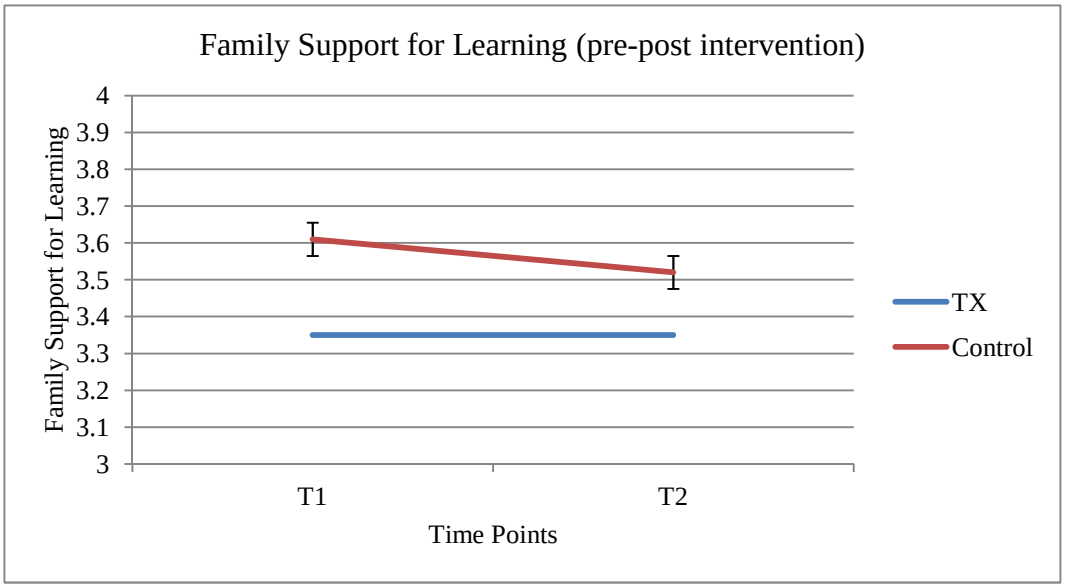

Figure 4.10. *Group mean differences for family support for learning from pre- to post-test before adjusting for baseline (pre-test) scores.*

Table 14 below summarizes the test results and estimates for the regression model for family support for learning when controlling for baseline (pre-test) scores.

Table 4.12. Predictor of change for the LYP treatment group on Family Support for Learning (Student Engagement)

Test results for multiple regression				
Predictor	Estimate	Standard error	T-value	P-value
(Intercept)	3.44	0.09	39.71	0.001*
Family Support for Learning (T1 centered)	0.52	0.16	3.18	0.001*
Treatment (Tx)	-0.02	0.11	-0.19	0.85
Interaction Effect (T1 centered*Tx)	0.14	0.21	0.65	0.51

Note. $N = 70$. *p < .001

Treatment Effects on Perceived Self-Efficacy. Students' levels of perceived self-efficacy were measured at baseline and post-intervention for the both LYP treatment and wait list control group. A regression model was conducted for each of the domains of perceived self-efficacy including: self-efficacy for self-regulated learning, social self-efficacy, and self-efficacy for academic achievement. First, test results indicated a large

and statistically significant main effect of the LYP treatment on students' self-efficacy for self-regulated learning, $t(83) = 4.56$, $p < .001$, $d = 0.94$.

Further analyses also indicated a significant interaction (Group x baseline level of self-efficacy for self-regulated learning) for self-efficacy for self-regulated learning, $t(83) = -2.44$, $p < .001$. Similar to test results for gratitude, Figure 11 below shows a significant intervention "crossover" effect for the two group means from baseline to post-test before adjusting for baseline (pre-test) scores, which again mitigates against many threats to internal validity.

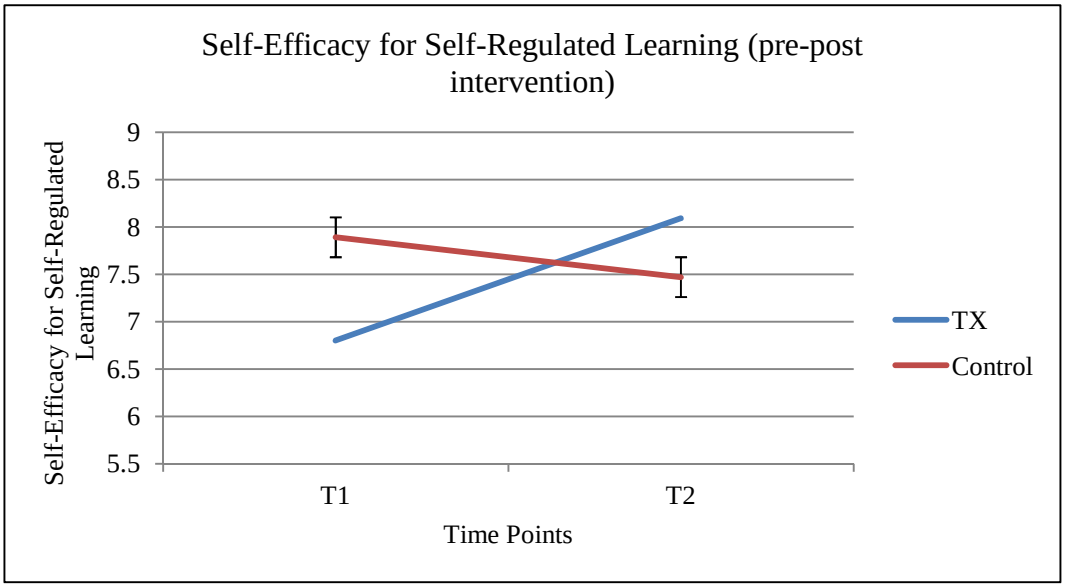

Figure 4.11. *Group mean differences for self-efficacy for self-regulated learning from pre- to post-intervention before adjusting for baseline (pre-test) scores.*

Table 15 below summarizes the test results and estimates for the regression model for self-efficacy for self-regulated learning when controlling for baseline (pre-test) scores.

Table 4.13. Predictor of positive change for the LYP treatment group on Self-Efficacy for Self-Regulated Learning

Test results for multiple regression				
Predictor	Estimate	Standard error	T-value	P-value
(Intercept)	6.55	0.30	21.71	0.001*

Self-Efficacy for Self-Regulated Learning (T1 centered)	0.95	0.17	5.47	0.001*
Treatment (Tx)	1.77	0.39	4.56	0.001*
Interaction Effect (T1 centered*Tx)	-0.55	0.23	-2.44	0.001*

Note. $N = 70$. *p < .001

Further test results indicated a moderate and statistically significant main effect of the LYP treatment on students' social self-efficacy, $t(83) = 1.13$, $p < .001$, $d = 0.46$. Figure 12 below shows an increase in both group means from pre- to post-intervention with the slope of the LYP treatment group being greater than the slope of the control group. Group means are nearly equivalent at the post-intervention time point. This effect could also be open to multiple threats to internal validity, such as regression towards the mean.

Once again, test results indicated a significant interaction (Group x baseline level of social self-efficacy) for social self-efficacy, $t(83) = 1.05$, $p < .001$. These test results suggest that baseline levels of social self-efficacy may have moderated treatment effects on social self-efficacy.

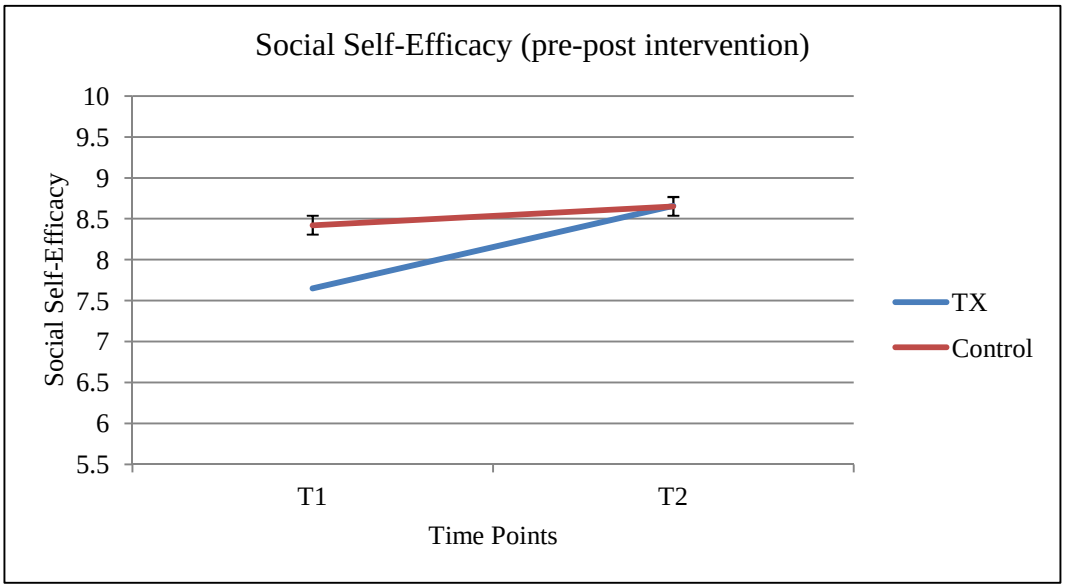

Figure 4.12. *Group mean differences for social self-efficacy from pre- to post-intervention before adjusting for baseline (pre-test) scores.*

Table 16 below includes the test results and estimates for the regression model for social self-efficacy when controlling for baseline (pre-test) scores.

Table 4.14. Predictor of positive change for the LYP treatment group on Social Self-Efficacy

Test results for multiple regression				
Predictor	Estimate	Standard error	T-value	P-value
(Intercept)	8.43	0.29	29.44	0.001*
Social Self-Efficacy (T1 centered)	0.30	0.13	2.35	0.001*
Treatment (Tx)	0.43	0.38	1.13	0.001*
Interaction Effect (T1 centered*Tx)	0.18	0.18	1.05	0.001*

Note. $N = 70$. *p < .001

Finally, test results also indicated a moderate sized, statistically significant main effect of the LYP treatment on self-efficacy for academic achievement, $t(83) = 2.62$, $p < .001$, $d = 0.74$. Similar to the results for social self-efficacy, Figure 13 below illustrates a "catch up" effect with the LYP treatment group starting out with lower self-efficacy for academic achievement and moving towards equivalent levels compared to the control group at Time 2.

Further regression analyses also indicated a significant interaction (Group x baseline level of self-efficacy for academic achievement) for self-efficacy for academic achievement, $t(83) = -1.38$, $p < .001$. These test results once again suggest that baseline levels of self-efficacy for academic achievement may have moderated treatment effects on self-efficacy for academic achievement. This finding serves as a potential confound when interpreting the positive impact of the LYP treatment on students' self-efficacy for academic achievement. Results of the study may have been influenced by significant group differences in baseline (pre-test) measures.

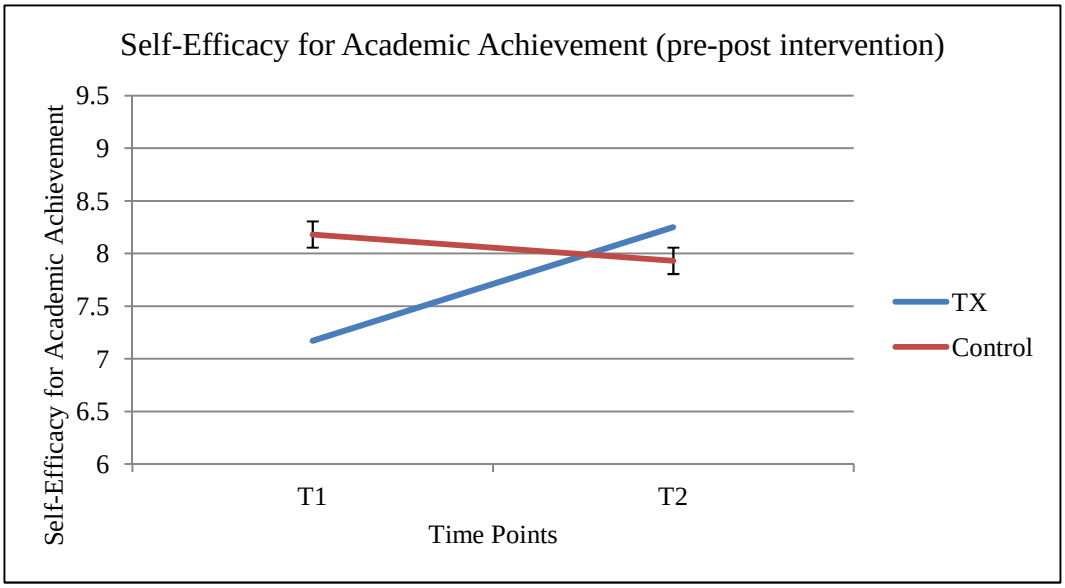

Figure 4.13. *Group mean differences for self-efficacy for academic achievement from pre- to post-intervention before adjusting for baseline (pre-test) scores.*

Test results and estimates for the regression model for self-efficacy for academic achievement can be found in Table 17 below.

Table 4.15. Predictor of positive change for the LYP treatment group on Self-Efficacy for Academic Achievement

Test results for multiple regression				
Predictor	Estimate	Standard error	T-value	P-value
(Intercept)	7.34	0.32	22.77	0.001*
Self-Efficacy for Academic Achievement (T1 centered)	0.73	0.21	3.49	0.001*
Treatment (Tx)	1.09	0.41	2.62	0.001*
Interaction Effect (T1 centered*Tx)	-0.34	0.25	-1.38	0.001*

Note. $N = 70$. *p < .001

Hypothesis #2- Treatment Effects on Objective Measures

Test results for the regression analyses of treatment effects on objective measures (i.e., school grades and counselor-rated after school performance) when controlling for baseline (pre-test) scores are included in this section.

Treatment Effects on School Grades. The same regression model as performed for the subjective (self-report) and other objective measures were conducted on participants'

school grades. Students' grades were collected from school report cards for Quarter 1 and Quarter 2 grading periods. Grades were obtained for the four primary academic subjects including Math, English, Science, and Social Studies. Quarter 1 grades for these subjects functioned as the baseline (pre-test) scores with group means centered (x=0) for the regression analyses.

Test results for school grades indicated a small but statistically significant main effect of the LYP treatment on both Math grades, $t(83) = -1.42$, $p < .001$, $d = -0.15$ and English grades, $t(83) = -0.52$, $p < .001$, $d = -0.03$. Further regression analyses for school grades also indicated a significant interaction (Group x baseline level of grade) for both Math grades, $t(83) = -0.51$, $p < .001$, and for English grades, $t(83) = -0.22$, $p < .001$. Figure 14 below for Math grades illustrates a decrease in the group means from Quarter 1 (Q1) to Quarter 2 (Q2) grading periods with the slope of the LYP treatment group being significantly greater than the slope of the control group.

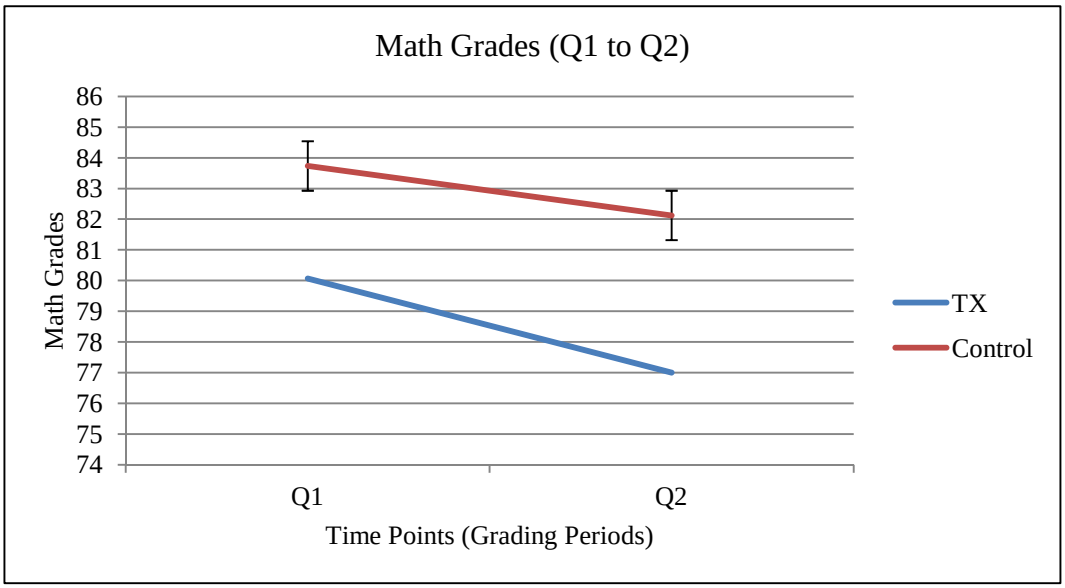

Figure 4.14. *Group mean differences for Math grades from Quarter 1 to Quarter 2 before adjusting for baseline (pre-test) scores.*

Test results and estimates for the regression model for Math school grades when controlling for baseline (Quarter 1) scores can be found in Table 18 below.

Table 4.16. Predictor of change for the LYP treatment group on Math grades

Test results for multiple regression				
Predictor	Estimate	Standard error	T-value	P-value
(Intercept)	80.49	1.23	65.70	0.001*
Math grades (T1 centered)	0.83	0.13	6.33	0.001*
Treatment (Tx)	-2.30	1.62	-1.42	0.001*
Interaction Effect (T1 centered*Tx)	-0.09	0.17	-0.51	0.001*

Note. $N = 70$. *p < .001

Similar to Figure 14 for Math grades, Figure 15 below shows a decrease in both group means from Quarter 1 (Q1) to Quarter 2 (Q2) grading periods for English grades with the slope of the control group being significantly greater than the slope of the LYP treatment group before adjusting for baseline (pre-test) scores.

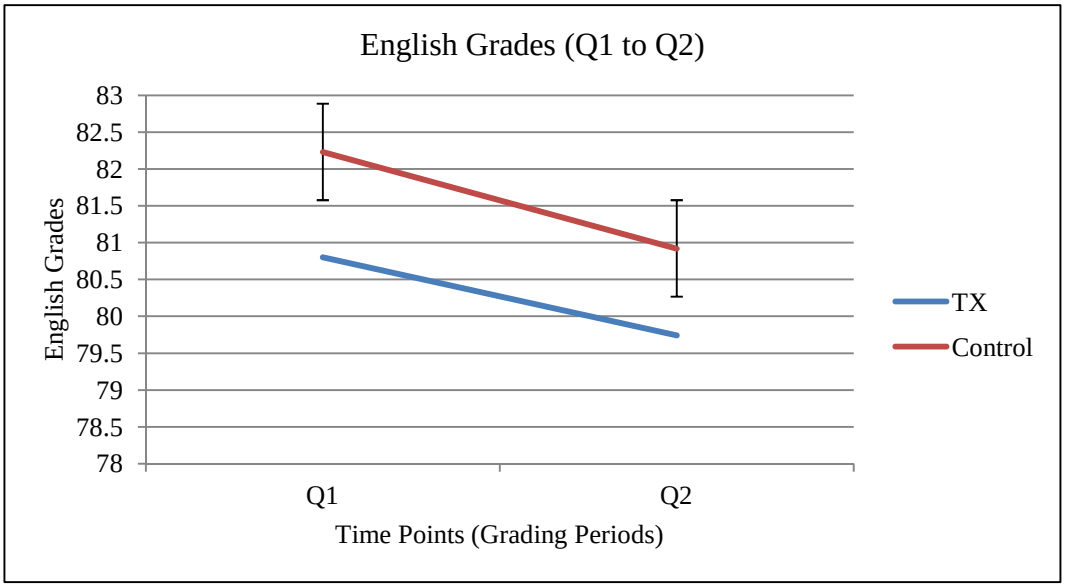

Figure 4.15. *Group mean differences for English grades from Quarter 1 to Quarter 2 before adjusting for baseline (pre-test) scores.*

Test results and estimates for the regression model for English school grades when controlling for baseline (Quarter 1) scores can be found in Table 19 below.

Table 4.17. Predictor of change for the LYP treatment group on English grades

Test results for multiple regression				
Predictor	Estimate	Standard error	T-value	P-value
(Intercept)	80.66	0.89	90.38	0.001*
English grades (T1 centered)	0.71	0.12	5.77	0.001*
Treatment (Tx)	-0.63	1.22	-0.52	0.001*
Interaction Effect (T1 centered*Tx)	-0.04	0.17	-0.22	0.001*

Note. $N = 70$. *p < .001

The predicted main effect for the LYP treatment on students' Science grades was not statistically significant, $t(83)$, = -0.79, $p = 0.43$, d = -0.08. Figure 16 below illustrates that the LYP treatment group remained about the same while the control group decreased from baseline to post-intervention. Further regression analysis also indicated that the interaction term (Group x baseline level of Science grades) was not significant, $t(83)$ = -0.53, $p = 0.60$.

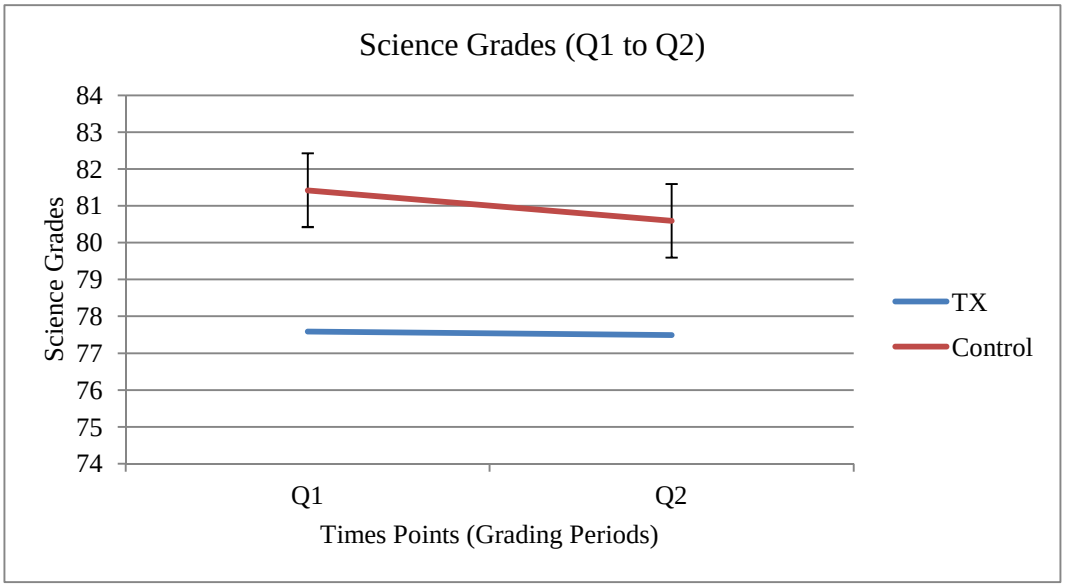

Figure 4.16. *Group mean differences for Science grades from Quarter 1 to Quarter 2 before adjusting for baseline (pre-test) scores.*

Test results and estimates for the regression model for Science school grades when controlling for baseline (Quarter 1) scores can be found in Table 20 below.

Table 4.18. Predictor of change for the LYP treatment group on Science grades

Test results for multiple regression				
Predictor	Estimate	Standard error	T-value	P-value
(Intercept)	79.44	1.31	60.54	0.001*
Science grades (T1 centered)	0.56	0.16	3.53	0.001*
Treatment (Tx)	-1.41	1.79	-0.79	0.43
Interaction Effect (T1 centered*Tx)	-0.10	0.20	-0.53	0.60

Note. $N = 70$. *p < .001

Finally, the predicted main effect for the LYP treatment on students' Social Studies grades was not statistically significant, $t(83)$, = -1.81, $p = 0.07$, $d = 0.36$. Figure 17 below illustrates that the LYP treatment group remained about the same while the control group increased from baseline to post-intervention. Further regression analysis also indicated that the interaction term (Group x baseline level of Social Studies grades) was not significant, $t(83) = 1.02$, $p = 0.30$.

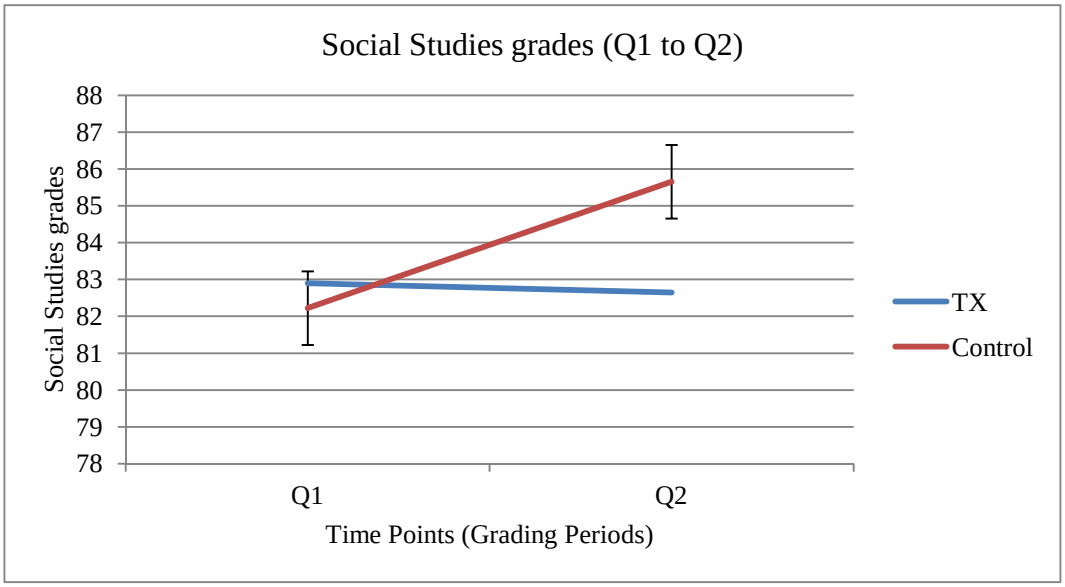

Figure 4.17. *Group mean differences for Social Studies grades from Quarter 1 to Quarter 2 before adjusting for baseline (pre-test) scores.*

Test results and estimates for the regression model for Social Studies school grades when controlling for baseline (Quarter 1) scores can be found in Table 21 below.

Table 4.19. Predictor of change for the LYP treatment group on Social Studies grades

Test results for multiple regression				
Predictor	Estimate	Standard error	T-value	P-value
(Intercept)	85.53	1.27	67.25	0.001*
Social Studies grades (T1 centered)	0.47	0.15	3.23	0.001*
Treatment (Tx)	-3.16	1.74	-1.81	0.07
Interaction Effect (T1 centered*Tx)	0.20	0.19	1.03	0.30

Note. $N = 70$. *p < .001

Treatment Effects on Academic and Interpersonal Competence. CHP staff members provided ratings on two components of students' after school performance (i.e., academic and interpersonal competence) during the Quarter 1 grading period and at post-intervention (end of Quarter 2 grading period) using the *After School Performance Survey* (ASPS). It should be noted that lower scores on the ASPS are indicative of a positive change (or increase) for students.

Test results from the first regression model indicated a moderate sized statistically significant main effect of the LYP treatment on academic competence, $t(83) = -4.41$, $p < .001$, $d = 0.75$. Additional regression analyses indicated a significant interaction (Group x baseline level of academic competence) for academic competence, $t(83) = -0.38$, $p < .001$. This finding serves as a potential confound when interpreting the positive impact of the LYP treatment on staff-reported academic competence.

Figure 18 below illustrates the two group means almost equivalent at baseline with the LYP treatment group moving down, which illustrates an improvement in the slope for participants' academic competence overtime and the control group's scores rising, which indicates a decline in academic competence. Overall, it appears that students in the LYP treatment group showed significant improvements in their levels of academic competence over the semester long intervention period while students in the

wait list control group showed a decrease in academic competence from pre- to post-intervention.

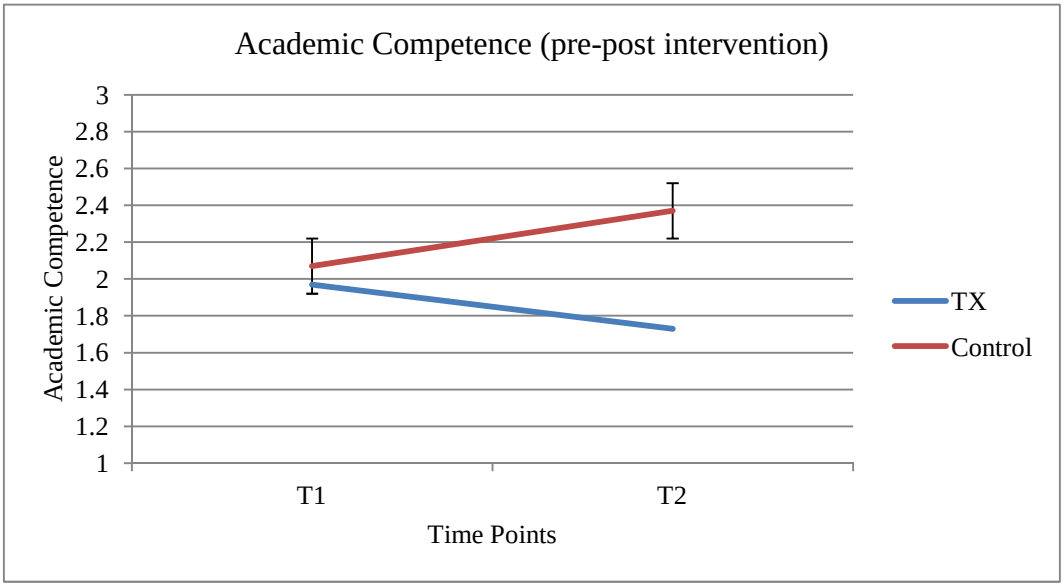

Figure 4.18. *Group mean differences for academic competence from Quarter 1 to post-intervention (end of Quarter 2) before adjusting for baseline (pre-test) scores.*

Test results and estimates for the regression model for academic competence when controlling for baseline (pre-test) scores can be found in Table 22 below.

Table 4.20. Predictor of positive change for the LYP treatment on Academic Competence

Test results for multiple regression				
Predictor	Estimate	Standard error	T-value	P-value
(Intercept)	2.31	0.09	24.85	0.001*
Academic Competence (T1 centered)	0.66	0.12	5.36	0.001*
Treatment (Tx)	-0.55	0.12	-4.41	0.001*
Interaction Effect (T1 centered*Tx)	-0.06	0.16	-0.38	0.001*

Note. $N = 70$. *p < .001

In addition, regression analyses from the second model also indicated a moderate to large sized and statistically significant main effect of the LYP treatment on students' interpersonal competence, $t(83) = -3.92$, $p < .001$, $d = 0.72$. Further regression analyses also indicated a significant interaction (Group x baseline level of interpersonal competence) for interpersonal competence, $t(83) = 1.23$, $p < .001$. Similar to academic

competence, Figure 19 below illustrates the two group means are nearly equivalent at baseline (Quarter 1) with the LYP treatment group moving down illustrating an improvement in the slope for students' interpersonal competence overtime and the control group moving up indicating a worsening in interpersonal competence from baseline to post-intervention.

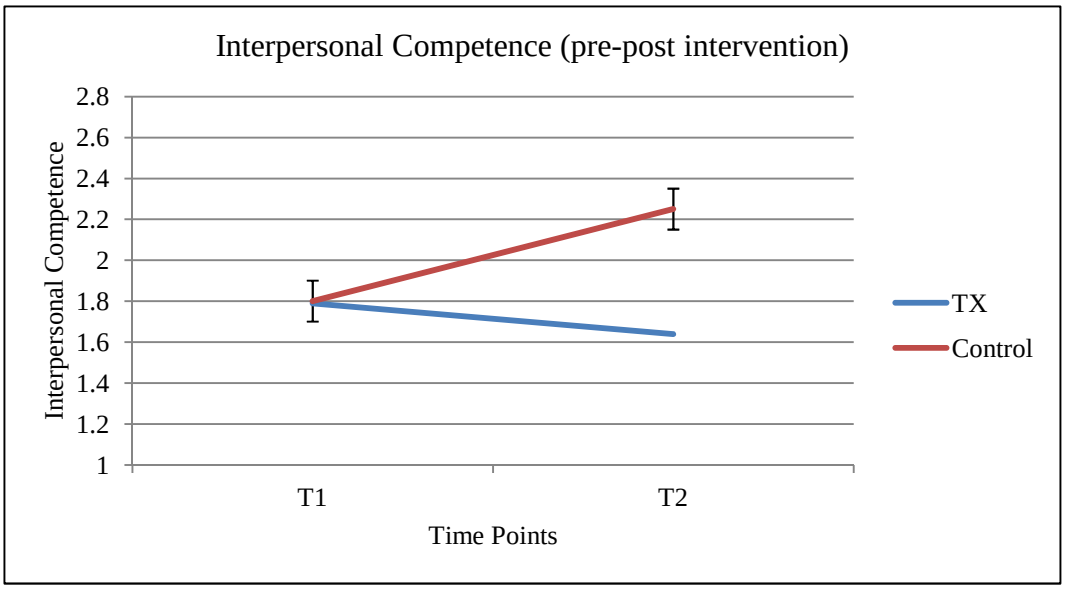

Figure 4.19. *Group mean differences for interpersonal competence from Quarter 1 to post-test (end of Quarter 2) before adjusting for baseline (pre-test) scores.*

Table 23 below includes test results and estimates for the regression model for interpersonal competence when controlling for baseline (pre-test) scores.

Table 4.21. Predictor of positive change for the LYP treatment on Interpersonal Competence

Test results for multiple regression				
Predictor	Estimate	Standard error	T-value	P-value
(Intercept)	2.26	0.12	18.80	0.001*
Interpersonal Competence (T1 centered)	0.52	0.17	3.06	0.001*
Treatment (Tx)	-0.63	0.16	-3.92	0.001*
Interaction Effect (T1 centered*Tx)	0.28	0.23	1.23	0.001*

Note. $N = 70$. *p < .001

CHAPTER 5

CONCLUSION

Summary

This study provides a unique perspective on multi-modal positive psychology interventions for adolescents by being the first to examine the implementation of such interventions within an after-school program and the first to use objective measures of academic performance. Student participants in the current study were recruited from an after-school program (i.e., the *Challenging Horizons Program)* designed for 6th to 8th grade middle school adolescents who were considered to be at-risk for academic failure and behavior problems at school. On average, student attendance rate in the after school program (84.8%) was less than in the previously studied summer program, which was 92.4% (Bird et al., 2012). The lower attendance rate does not necessarily relate to the acceptability of LYP in the after school program; but it does suggest that it is somewhat less feasible in terms of reaching students in the after school setting.

Outcomes from the current study support the hypothesis that participation in the LYP intervention can lead to increased subjective well-being (SWB), gratitude, and self-efficacy, and satisfaction with teacher-student relationships at school. However, positive effects on SWB, self-efficacy, and teacher-student relationships should be viewed with caution, owing to large baseline group differences. The pattern of these test results could reflect a "catch up" effect, which is open to plausible confounds to the intervention effect, such as regression towards the mean or selection by time interactions. Significant group

differences for baseline (pre-test) scores were found on nine out of the 19 dependent variables (DVs) in the study. Group differences at baseline for certain student outcomes may have moderated treatment effects on those DVs.

With respect to objective outcomes, the results were mixed for academic grades, but positive for staff-rated academic and interpersonal competence. Two of the subjects did not change significantly and two subjects appeared to slightly decrease from baseline (Quarter 1) to post-intervention (end of Quarter 2). Effect sizes (adjusted Cohen's *d*) for grades ranged from -0.15 to 0.36 with an average of 0.03. In the realm of intervention research, students' school grades have been notoriously difficult to change. For example, one of the most popular school-based interventions, school-based mentoring, typically has resulted in very small effects (Dubois, Holloway, Valentine, & Cooper, 2002). In addition, these interventions do not always change grades for the better. To illustrate, McQuillin, Smith, and Strait (2011) found that randomization to a brief, school-based mentoring program for students transitioning to middle school was associated with decreases in reading grades. Such research findings have emphasized the importance of being cautious in developing interventions that examine outcomes such as school grades and also "being vigilant to unanticipated negative effects" (p. 856).

The positive effects on staff-rated academic and interpersonal competence are a novel contribution to the research literature. Effect sizes (adjusted Cohen's *d*) for academic and interpersonal competence were 0.75 and 0.72, respectively, with an average of 0.74. However, these ratings should be interpreted with caution in this study due to the fact that staff members were not blind to the intervention conditions and worked inside the after-school program.

Comparisons with Previous Research

Regression analyses on SWB related measures (i.e., life satisfaction, positive affect, and negative affect) were largely consistent with results from the initial pilot-test of the *Leadership and Young Professionals* (LYP) as a two-week summer intervention (Bird, 2012). In this study, significant main effects with effect sizes (adjusted Cohen's *d*) ranging from 0.10 to 1.27 with an average of 0.56 were found on subjective outcomes. In a comparable intervention study (Suldo, Savage, & Mercer, 2013), researchers found that life satisfaction of 6th grade students in a positive psychology intervention group increased significantly (eta-squared= 0.20), while the wait list control group declined during the same 10-week period. However, Suldo et al. (2013) found no significant effects from pre- to post-intervention for the intervention group on positive affect, negative affect, and externalizing symptoms with effect sizes (eta-squared) of 0.15, 0.01, 0.06, respectively. Taken together, these three extant studies (which include this one) are finding positive effects on subjective (self-report) outcomes with effect sizes ranging from 0.20 to 1.27.

Results from the current study also demonstrate that the LYP approach has the anticipated positive impact on increasing participants' gratitude. Similar to previous intervention results involving the targeted manipulation of adolescents' gratitude (Froh et al., 2008; Froh et al., 2009), the current study suggests that intervention can increase self-reported gratitude in middle school students. These findings are consistent with a few studies involving writing letters of gratitude that have been conducted with college-aged students and adults (Toepfer et al., 2012; Toepfer & Walker, 2009). Thus, the current study provides a unique context and novel evidence for the positive impact of gratitude

letter writing with younger adolescents. Future studies might examine the specific activities that increase gratitude, such regularly counting blessings (i.e., gratitude journaling), writing letters of gratitude, and expressing gratitude directly to a positive benefactor (i.e., gratitude contacts).

Previous research has shown that self-efficacy beliefs have a significant impact on adolescents' SWB both concurrently and longitudinally (Caprara, Steca, Gerbino, Paciello, & Vecchio, 2006). Studies have also indicated that high SWB correlates with more confidence in students' academic abilities (i.e., perceived self-efficacy for academic achievement) and more positive attitudes about the value of education (Suldo & Shaffer, 2007; Suldo, Shaffer, & Riley, 2008). Despite these findings, there has been minimal intervention research in the field of positive psychology focused on enhancing self-efficacy. Only one positive psychology intervention study with an adult population involving SWB (Ayres & Malouff, 2007) was found that focused on improving self-efficacy. The study's results indicated that participants in an intervention group that focused on problem-solving skills experienced growth in problem-solving self-efficacy, life satisfaction and positive affect relative to participants in a no-treatment control group.

Although the unique effects of problem-solving skills to enhance self-efficacy were not evaluated in this study, the current study's findings are consistent with previous interventions involving problem-solving skills training with adolescents that also lead to increased SWB and perceived self-efficacy. Overall, there is a need for more positive psychology intervention research that incorporates measures of perceived self-efficacy as an important developmental outcome and possible contributor to increased SWB in youth populations.

Novel Contributions of this Study

An important contribution introduced in this study is moving beyond self-report measures in the study of SWB and positive psychology interventions. The practice of using multiple types of measures in positive psychology research should be strongly emphasized. The current study revealed new significant findings of the LYP intervention on enhancing students' academic and interpersonal competence as evaluated by trained after-school CHP staff members. Furthermore, to the best of our knowledge, no studies on positive psychology interventions with youth have involved the evaluation of school grades and staff-rated academic and interpersonal competence. Previous research has emphasized that teachers' expectations of students' academic competence are strongly associated with children's actual skills (Brophy, 1983; Wigfield, Galper, Denton, & Seefeldt, 1999) and can predict student's future achievement, even when controlling for students' previous levels of achievement (Jussim, Eccles, & Madon, 1996; Kuklinski & Weinstein, 2001). Thus, it is important to evaluate teacher and counselor-rated academic and interpersonal competence as a critical outcome of positive youth development and also consider these variables as potential moderators of students' school grades.

Study Limitations

Several limitations were considered for the current intervention study. Firstly, although students were randomly assigned to either the LYP group or control group, there were moderate to large, statistically significant group differences at baseline on several of the outcome variables. Thus, rather than being a randomized controlled study, this study should likely be regarded as a quasi-experimental design with non-equivalent groups. Future studies should use larger samples, which make equivalence more likely, and allow

for more balancing for equivalence on measured variables. In retrospect, we could have checked for pre-treatment equivalence and re-randomized the two groups. As a result, the "catch up" effect on several of the outcome variables (i.e., life satisfaction, negative affect, SWB, social self-efficacy, and self-efficacy for academic achievement) could be confounded by regression to the mean, an instrumentation by time effect, or selection by time interaction. Also, the significant interactions of the treatment with baseline (pre-test) levels of the measure are troubling and increase concern with potential confounds. However, it should be noted that some of the results with unequal baseline showed "crossover" effects (i.e., gratitude and self-efficacy for self-regulated learning), which may be trustworthy because crossover effects are not susceptible to these threats to internal validity (Shadish et al., 2002).

Secondly, only immediate post-intervention effects of the intervention were measured during the course of one school semester. Replication studies should determine whether or not there are long-term benefits of the LYP intervention approach on students' academic, social, vocational, and mental health outcomes. Consistent with previous studies of SWB and gratitude interventions (Froh et al., 2008; Suldo et al., 2013), follow-up data should be collected on student outcomes from three months up to two years after the intervention delivery to determine if positive effects of the LYP treatment group are maintained overtime.

Thirdly, primary investigators relied mainly on self-report (subjective) data to evaluate the overall efficacy of the LYP treatment on predictors of students' well-being and related outcomes. Although the proximal targets of the LYP intervention are subjective, a strong evaluation of objective measures of performance (e.g., school

attendance, multi-year grade reports, standardized test scores, and behavior reports) related to these subjective measures would be desired.

A fourth concern of the current study is that the primary investigator conducted data collection, so there is a possibility of demand characteristics placed on the students in the sample. Furthermore, staff who provided ratings were aware of participants' group assignments due to the primary investigator's direct involvement in the after school program and the implementation of the intervention. Students were also not blind to the study, and this may have impacted measurement and could have caused differential treatment. This concern should be addressed in future studies by including double-blind procedures. In future studies, staff could be kept blind to the hypotheses; however, this may be difficult. Likewise, it may be difficult to keep student blind in the context of getting informed consent to voluntarily participate in research within a school context. At the very least, observers and raters who are blind to the treatment conditions should be used to provide collateral data on intervention effects.

Fifth, positive effects of the intervention on SWB and other dependent variables could be related to aspects of the CHP after-school program itself. Students' SWB may have been positively influenced by their participation in physical activity, group-based sports, computer activities, expressive writing, and interaction with college-aged mentors. For example, one recent study indicated that regular exercise and physical activity was shown to increase SWB in adolescence (Bartels, Moor, Aa, Boomsma, & Geus, 2012). Due to the fact that both groups of middle school students experienced these additional activities equally, this study potentially demonstrates the incremental benefit of the LYP intervention above and beyond the other daily after school activities. However, students'

involvement in the after school program could have created a unique context that would ultimately threaten the external validity of the study's results. It would be advantageous to evaluate the overall impact of the LYP in the context of a variety of program options including as supplementary activities to class instruction, as a primary component of summer programs and curriculum within an alternative education program, or settings for adolescents with or without behavioral and social-emotional problems.

Sixth, all participants were recruited from an after-school program that included students from two public middle schools in Columbia. S.C. All students qualified for free or reduced lunch at their school and received scholarships to participate in the after-school program throughout the school year. Students were recruited through open parent enrollment and teacher referrals of students considered at-risk for academic failure and behavior difficulties. Due to these recruitment procedures, the study's sample included a disproportionate percentage of Black/African American (84.88%) students. Replication studies of the LYP intervention should consider recruiting a larger and more ethnically diverse sample that is representative of the general student population across multiple school sites.

Lastly, in its current design, LYP functions as a package of evidence-based or promising intervention strategies and the current evaluation framework makes it unclear which components of the intervention leads to specific changes. Future studies may wish to assess the degree to which each module of the LYP intervention has a significant effect on youth's SWB, gratitude, self-efficacy, school grades and other indicators of positive school functioning. Dismantling studies could reveal some key contributing components, and find more efficient versions of the LYP. Nevertheless, demonstrating efficacy and

effectiveness may be more important at this point in time. Thus, the main priority should include replication of the LYP intervention in a variety of treatment settings, with diverse populations, and with less experienced or less motivated program staff.

Future Directions for Research

Two small scale pilot studies have demonstrated an initial level of efficacy for the LYP intervention approach on improving adolescents' academic and social-emotional outcomes. The next step in the investigation of the LYP should be a large, well-controlled efficacy study with multiple controls to reduce potentially biased responding from participants and observers. Also, rigorous fidelity assessment procedures should be implemented and assessed for acceptability, feasibility, and sustainability. If this efficacy study is successful, the next phases of research should examine multiple school sites, evaluation of potential dosage effects, mechanisms of action (e.g., mediators), and moderators. This is strongly advised prior to widespread dissemination of the LYP multi-modal intervention approach.

Future studies of the LYP intervention should evaluate all proximal sources of variation in treatment effects. One conceptual framework (Weiss, Bloom, & Brock, 2013) suggests, "all proximal sources of variation in program effects can be grouped into three categories", (i.e., the "three Cs"): (1) Treatment Contrast, (2) Client Characteristics, and (3) Program Context. More specifically, the treatment contrast *mediates* (or causes) program effects and is defined as the difference between the receipt of program services plus other existing services and the receipt of other existing services only. According to Weiss et al. (2013), treatment contrast is comprised of at least four dimensions including *Content* (i.e., What services are provided?), *Quantity* (i.e., How much of each service is

provided?), *Quality* (i.e., How well is each service provided?), and *Conveyance* (i.e., How, when, and by whom is each service provided?).

In the same framework, client characteristics and program context *moderate* the size of program effects. In particular, client characteristics may involve factors such as age, race/ethnicity, cultural norms, geographical location, political views, clients' (or participants') varying levels of risk, and clients' readiness for the program. Program context is generally defined as the broader *context*, or environment, in which the program operates and may include location type, economic indicators, safety, and socio-demographic variables. As a whole, factors included in the above framework would assist in identifying sources of variation in program effects and help to inform the design and implementation of future replication studies of the LYP intervention to improve treatment outcomes.

In addition, it would be informative to assess whether or not school personnel (i.e., teachers, guidance counselors, and classroom aides) could deliver the intervention with strong fidelity. In the two pilot studies of the LYP, an advanced level school psychology graduate student (the primary author) trained after-school counselors and helped to deliver the intervention. As a result, future studies should evaluate the overall acceptability and feasibility of the intervention to determine if a less experienced intervention team could still effectively and efficiently deliver the LYP, presumably with some prior training and implementation support.

Based on the current study, this multi-modal positive psychology intervention has the potential to be successful within a semester long after school program, which is generally affordable and feasible to deliver in the context of a wide variety of in-school

and out-of-school settings. However, results from a previous randomized controlled trial of the LYP intervention during a two-week summer program (Bird et al., 2012) found more predicted main effects of the treatment on adolescents' SWB, gratitude, and social self-efficacy (in comparison to a literacy-based control group) than in the current study. As a result, there needs to be some consideration upon whether or not the after school setting is the most ideal place to provide such an intervention.

To generate the most robust and practical version of the LYP intervention, future replication studies may benefit from adopting a more sequential process of validation such as the *deployment-focused model of intervention development and testing* model (Weisz, 2004). The model involves six basic steps of intervention development including:

1) Pilot-testing and manualizing of the treatment protocol
2) Initial efficacy trial of the treatment compared to a control group
3) Series of single-case pilot tests
4) Series of group-design partial effectiveness studies
5) Series of group-design clinical trials by other practitioners who have been trained in the treatment protocol
6) Series of studies focused on the relationship between the treatment program and the practice contexts in which it is used.

Having now pilot-tested (step one) and produced initial test results to evaluate the efficacy of the LYP intervention compared to a control group (step two), future studies should focus on steps three to six in the *deployment-focused model*. Replication studies should likely concentrate on evaluating the effectiveness of the LYP intervention as a larger scale study within various contexts (e.g., classroom, after-school interventions, or

mentoring-based programs) using other practitioners who have been trained in the treatment protocol.

In addition, multi-tiered systems of support (or MTSS) have become increasingly prevalent in the delivery of school mental health services. Some primary examples of MTSS in schools include school wide positive behavioral interventions and supports (SWPBIS), response to intervention (RTI), school-based behavioral health centers (SBHCs), and student assistance programs (SAPs). Across all of these service delivery models, MTSS provide a continuum of behavioral and mental health services for students that aim to prevent academic and behavioral problems. Future research studies may wish to evaluate the LYP approach as a Tier 2 intervention within the context of a school's existing MTSS. The LYP intervention could also be evaluated in comparison to other manualized Tier 2 interventions such as Check and Connect (Anderson, Christenson, Sinclair, & Lehr, 2004; Lehr, Sinclair, & Christenson, 2004), Check-in/Check-out (Hawken, MacLeod, & Rawlings, 2007; Todd, Campbell, Meyer, & Horner, 2008) and First Step to Success (Carter & Horner, 2007; Golly, Stiller, & Walker, 1998). Currently, we are generating a three-tiered intervention model focused on school-based mentoring to improve adolescents' college preparation and future school success. The LYP approach would function as a Tier 2, small groups intervention for youth at the middle and high school age range who are not responding well to Tier 1 (Universal) intervention strategies and may be in need of more focused and intensive academic and behavioral intervention.

In conclusion, the results of this study can be interpreted to mean that the LYP after school intervention can positively enhance middle school students' SWB, gratitude, and perceived self-efficacy, which in turn, may help to prepare them for future demands

in high school, college, and career-based settings. This study also shows a positive influence on students' academic and interpersonal competence as rated by after school staff members who interact with these students on a daily basis. The current study has some serious methodological limitations, but in the context of prior studies of multi-modal positive psychology interventions with this age group by Bird et al. (2012) and Suldo et al. (2013), this appears to be a promising approach to improving youth well-being, perceived self-efficacy, and academic performance. Positive youth development interventions that incorporate strengths-based exercises, gratitude activities, personal goal setting, and social problem-solving skills have the potential to lay a solid foundation for adolescents' future academic success, career preparation and positive social functioning.

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