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## Youth Mentoring Partnership's Friend Fitness Program: Theoretical Foundations and Promising Preliminary Findings from a New Positive Psychology Intervention for Grit and Positive Youth Development

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# Youth Mentoring Partnership's Friend Fitness Program: Theoretical Foundations and Promising Preliminary Findings from a New Positive Psychology Intervention for Grit and Positive Youth Development

## Abstract

Education reform and promotion of adolescent positive health (both physical and psychological) are two major public policy issues that can be impacted by direct intervention. The fields of positive psychology and positive youth development offer a theoretical foundation for scientific research as well as pragmatic, evidence-based methods of positive interventions (PIs). Mentoring is a unique intervention method geared towards both promotion and prevention. The *Youth Mentoring Partnership's Friend Fitness Program* represents a new PI method with the goal of strengthening character traits in young people through a unique form of physical fitness-based mentoring in which adolescents must persevere through intense "moments of choice." This paper will present the theoretical foundations of and initial empirical support for the *Friend Fitness Program's* efficacy based on a longitudinal assessment. First, the theoretical framework will be presented through a comprehensive literature review on positive youth development, positive interventions, and most notably, an important character trait to foster in youth: grit. Defined as passion and perseverance for the achievement of long-term goals, (Duckworth, Peterson, Matthews, & Kelly, 2007), grit has been identified by the United States Department of Education as a critical factor for success in the 21<sup>st</sup> century (Shechtman, DeBarger, Dornsife, Rosier, & Yarnall, 2013) as it is found to be directly related to students' GPA and inversely related to hours spent watching television (Duckworth & Quinn, 2009). Measures for positive youth development (Bowers et al., 2010) and grit (Duckworth et al., 2007) will be explained. Second, this paper will present an on-going study collecting prospective, longitudinal data on positive youth development and grit for *Friend Fitness* participants. Preliminary findings from this research indicate that participants experienced an overall increase in grit, and that this character trait was related to positive youth development. These are groundbreaking findings that necessitate continued investigation due to their implications on physical, cognitive, social, and behavioral development in adolescence. It is hoped that this study will garner interest for future research on grit interventions and school-based positive psychology initiatives with the goal of supporting students to have higher well-being, school engagement, positive relationships, achievement, and fewer physical health problems such as obesity.

## Keywords

Grit, Positive Psychology, Positive Youth Development, Positive Education, Mentoring, Physical Activity & Fitness, Health, Positive Adolescent Health, Well-being

## Disciplines

Child Psychology | Educational Assessment, Evaluation, and Research | Education Policy | Health Policy | Health Psychology | Psychology | Urban Education

Youth Mentoring Partnership's Friend Fitness Program: Theoretical Foundations and  
Promising Preliminary Findings from a New Positive Psychology Intervention  
for Grit and Positive Youth Development

Christopher E. Major  
University of Pennsylvania

A Capstone Project Submitted  
In Partial Fulfillment of the Requirements for the Degree of  
Master of Applied Positive Psychology

Advisor: Gloria Park, Ph.D.

August 1, 2013

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Education reform and promotion of adolescent positive health (both physical and psychological) are two major public policy issues that can be impacted by direct intervention. The fields of positive psychology and positive youth development offer a theoretical foundation for scientific research as well as pragmatic, evidence-based methods of positive interventions (PIs). Mentoring is a unique intervention method geared towards both promotion and prevention. The *Youth Mentoring Partnership's Friend Fitness Program* represents a new PI method with the goal of strengthening character traits in young people through a unique form of physical fitness-based mentoring in which adolescents must persevere through intense "moments of choice." This paper will present the theoretical foundations of and initial empirical support for the *Friend Fitness Program's* efficacy based on a longitudinal assessment. First, the theoretical framework will be presented through a comprehensive literature review on positive youth development, positive interventions, and most notably, an important character trait to foster in youth: grit. Defined as passion and perseverance for the achievement of long-term goals, (Duckworth, Peterson, Matthews, & Kelly, 2007), grit has been identified by the United States Department of Education as a critical factor for success in the 21<sup>st</sup> century (Shechtman, DeBarger, Dornsife, Rosier, & Yarnall, 2013) as it is found to be directly related to students' GPA and inversely related to hours spent watching television (Duckworth & Quinn, 2009). Measures for positive youth development (Bowers et al., 2010) and grit (Duckworth et al., 2007) will be explained. Second, this paper will present an on-going study collecting prospective, longitudinal data on positive youth development and grit for *Friend Fitness* participants. Preliminary findings from this research indicate that participants experienced an overall increase in grit, and that this character trait was related to positive youth development. These are groundbreaking findings that necessitate continued investigation due to their implications on physical, cognitive, social, and behavioral development in adolescence. It is hoped that this study will garner interest for future research on grit interventions and school-based positive psychology initiatives with the goal of supporting students to have higher well-being, school engagement, positive relationships, achievement, and fewer physical health problems such as obesity.

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## Overview

In partial fulfillment of the requirements for the degree of Master of Applied Positive Psychology, this paper will present the theoretical foundations for and initial support of a longitudinal evaluation of the *Youth Mentoring Partnership's Friend Fitness Program*, which is being conducted in collaboration with the Temple University's Sports Industry Research Center. The goals of this paper are to: (a) Introduce the reader to the field of positive psychology by defining the underlying elements of well-being theory and positive interventions for education, (b) Describe the present study's research hypotheses and the Friend Fitness Program as a positive youth development program that represents a new positive intervention for education, (c) Review literature on positive youth development, positive interventions, and grit to establish the theoretical foundation for the Friend Fitness Program, (d) Introduce an ongoing longitudinal study collecting prospective data on positive youth development and grit for participants of the Friend Fitness Program, (e) Present early results from this research on changes in adolescent participants' levels of grit, and (f) Discuss the studies limitations and future directions.

## Introduction to Positive Psychology

Martin Seligman, 1998 APA President Address (Fowler, Seligman, & Koocher, 1999):

“Our mission is to utilize quality scientific research and scholarship to reorient our science and practice toward human strength. In this way, we can learn to identify and understand the traits and underpinnings of preventive psychological health and, most importantly, learn how to foster such traits in young people.” (p. 561)

## What is Positive Psychology?

Seligman proposed that scientific knowledge of positive human functioning is useful and so began the ‘positive psychology’ movement during his term as president of the American

Psychological Association (APA) in 1998. One of the goals within the developing field of positive psychology is to use this scientific understanding to employ effective positive interventions to better our individual lives, families, and communities (Seligman & Csikszentmihalyi, 2000). Positive psychology is primarily concerned with using psychological theory, research, and intervention techniques to understand the positive, adaptive, creative, and emotionally fulfilling aspects of individual human behavior – essentially, investigating what makes life worth living.

Positive psychology's name stems from its deviation from the primary focus of contemporary psychology and healthcare: the treatment of illness rather than the promotion of health. In the mid-twentieth century, the field of psychology began a shift toward treating mental illness (Seligman, 2002). Conversely, positive psychology is described as a *metaphysical orientation toward the positive* (Csikszentmihalyi, 2000) or a *eudaimonic turn* to viewing the good in life as something just as real, measurable, and meaningful as the bad (Pawelski & Moores, 2012).

Positive psychology (Seligman & Csikszentmihalyi, 2000, p. 5) is defined as a “science of positive subjective experience, positive individual traits, and positive institutions.” Typically, much focus is given to deficits (Seligman & Csikszentmihalyi, 2000) - immorality instead of morality, sickness not health, and unhappiness over happiness – and what distinguishes the positive psychology paradigm is a focus on human strengths.

Positive psychology is the scientific study of human flourishing (Linley, Joseph, Harrington, & Wood, 2006), a multidimensional approach to well-being that moves beyond mere happiness. Some critics mistakenly view the positive psychology field as narrowly focused on positive emotions (i.e., happiness). Indeed in his book *Authentic Happiness* (2002), Seligman introduced the general public to the field of positive psychology by outlining three measurable

elements that contribute to authentic human happiness: positive emotion, engagement, and meaning. In his 2012 book *Flourish*, Seligman introduced well-being theory, which has an expanded focus for positive psychology: the multi-dimensional goal of happiness and well-being. The broad construct of well-being is composed of five elements, represented by the acronym PERMA: positive emotion, engagement, relationships, meaning, and achievement.

### **Elements of Well-Being: PERMA**

**Positive emotions.** This element of well-being refers to positive states (e.g., joy, love), which can be described as an individual's pleasant feelings or subjectively satisfying experiences (Seligman, 2002). Barbara Fredrickson's (2004) broaden-and-build theory established a framework for understanding the impact of positive emotions on well-being. Fredrickson described the evolutionary and adaptive nature of positive emotions: broadening an individual's intellectual, physical, physiological and social resources; building assets to draw upon as threats and opportunities present themselves; and, ultimately, expanding the number of potential behavior options or responses available by increasing one's creativity, tolerance and openness.

Empirical evidence indicated that one's ratio of positive emotions and negative emotions (i.e. positivity to negativity, P/N ratio) related to higher performance in business teams (Losada & Heaphy, 2004), longevity in married relationships (Gottman, 1994), and flourishing in individuals with a minimum positivity to negativity ratio of three to one (3:1) (Fredrickson & Losada, 2005). These correlational findings do not indicate causality (i.e., a 3:1 P/N ratio does not guarantee better work, longer marriage, or happier life), but an important contribution of this work is that it established a numerical guideline to promote individual well-being.

**Engagement.** Engagement refers to the state of being completely absorbed in an activity (Seligman, 2012). Different from positive emotion, engagement is described as flow (Csikszentmihalyi, 1990), the optimal psychological state that occurs when there is a balance

between perceived *challenges* and *skills* in an activity. This measurable state of optimal experience is characterized by effortless attention, absence of time awareness, and absence of emotion (Peterson, 2006).

**Relationships.** Positive psychology was described by Christopher Peterson in three words: “other people matter” (2006). Other people and our “connected life” with them emphasizes the importance of relationships for positive subjective experiences (Seligman, 2012). Relationships with other people can help individuals to capitalize on positive events in their lives (Gable & Gosnell, 2011). Relationships are pursued for their own sake and result in well-being when individuals become a part of some larger social whole (Valliant, 2008), a hive (Wilson, 2012), or a dyad of two individuals (Gable & Gosnell, 2011).

**Meaning.** This construct consists of a connection to and service of something that one believes is bigger than the self, such as the following social institutions: religion, political parties, and family (Seligman, 2012). Meaning is an umbrella term related to concepts of: a subjective feeling that one’s life and actions have meaning, purpose, and movement toward desired goals (King, Hicks, Krull, & Del Gaiso, 2006); and a set of core beliefs, feelings, and goals that constitute global meaning and act as a general orienting system (Pargament, 2008). Haidt (2006) emphasized the importance of meaning in love and work, specifically drawing a connection well-being, positive subjective experience and institutions.

**Achievement.** Accomplishment contributes to well-being and is often pursued for its own sake, even when it does not contribute of the other elements of PERMA (Seligman, 2012). Having explicit goals in life and making efforts to achieve them is an important part of achievement’s relationship to well-being and happiness. Grit is passion and perseverance for the achievement of long-term goals, especially in the face of obstacles (Duckworth, Peterson, Matthews, & Kelly, 2007). This character trait enables individuals to succeed in the struggle to

overcome adversity, bounce back from failure, and achieve their goals. Positive individual traits like grit contribute to well-being vis-à-vis achievement and, as first introduced in Seligman's 1998 APA speech, the goal of positive psychology is to learn how to foster such traits in people—specifically, in young people (Fowler, Seligman, & Koocher, 1999).

To summarize the construct of well-being, the PERMA elements have been identified as key contributors to individual well-being. Each element satisfies all three of these requirements: It contributes to well-being; individuals pursue it for its own sake, as it is an end not merely a means to reach another element; and it is defined and measured independently of the other elements (Seligman, 2012). Well-being theory provides a useful framework for understanding the PERMA elements and for using this scientific understanding to employ effective positive interventions to better our individual lives, families, and communities (Seligman & Csikszentmihalyi, 2000).

### **What is a Positive Intervention?**

There is not a conclusive definition for “positive intervention,” nor is there an absolute guideline for the classification of an intervention as “positive” (Parks & Biswas-Diener, 2013). Parks and Biswas-Diener described three broad conceptualizations of positive interventions: focus on positive *topics*; operate by a positive *mechanism* or target a positive *outcome*; and are designed to promote well-being rather than fix weakness. Paweslki (2012) presented a similar definition and a helpful “superhero” metaphor: positive interventions are positive in the point of application (i.e., increases well-being away from zero, +2 to +8, rather than toward zero, -8 to -2) and positive in method (i.e., growing good things, “green cape,” rather than fighting bad things, “red cape”). Sin and Lyubomirsky defined the aim of positive intervention to “cultivate positive feelings, positive behaviors, or positive cognitions” (2009, p. 1). Fowler, Seligman, and Koocher (1999) proposed a paradigm shift in the field of psychology – the radical notion to study

happiness in addition to suffering and to endeavor to validate interventions that increase happiness as well as relieve suffering.

Positive youth development (PYD) refers to intentional intervention efforts of other youth, adults, communities, government agencies, and schools to provide opportunities for youth to enhance their interests, skills, and abilities. PYD is an established framework of research, practice, and public policy. Mentoring is a PYD intervention strategy, which provides supportive relationships and structure for adolescents to be agents of their own developmental growth (Larson, 2006).

Positive interventions (PIs), using this author's definition, are intentionally structured activities that shift individuals' attention and strengthen individuals' ability to self-regulate thoughts and actions – through both the mind and the body. Positive education, similar to PYD, is a framework of school-based PIs that attempts to teach students character traits, such as grit, and other theory-based concepts of positive psychology to foster well-being and academic achievement in students (Waters, 2011).

Existing validation of positive interventions showed that these interventions are a structured means to measurably increase happiness (Seligman, Steen, Park, & Peterson, 2005) and improve well-being (Waters, 2011). These empirical studies and meta-analyses supported the efficacy and effectiveness of positive interventions. Efficacy measures *capacity* or potential ability for results in clinical trials with controlled conditions (i.e., selective patient screening, strict process fidelity, operationalized target outcomes, highly sensitive measurements, isolation of variables, investigated for a limited / fixed time period), whereas effectiveness measures the *capability* or proven ability for results in actual treatments without controlled conditions.

Sin and Lyubomirsky's meta-analysis of 51 different empirical studies on positive interventions found a strong correlation between effects of positive interventions (PIs) and

increased well-being, as well as decreased depression (2009). Sin and Lyubomirsky (2009) concluded that positive interventions are effective, particularly when utilized with individualized therapy and for relatively longer periods of time.

**Positive Education.** Perhaps the most important contribution of positive psychology is positive education (Seligman, Ernst, Gillham, Reivich, & Linkins, 2009). This empirically-tested framework of positive interventions is intended to teach young people the skills of well-being (character, resilience, emotional fitness), along with teaching the traditional goals of education, as an effort to enable youth to perform better at school and improve later performance in the workplace (Seligman & Fowler, 2011). School-based positive psychology interventions can help prevent depression (Brunwasser, Gillham, Kim, & Eric, 2009), increase individual happiness (Seligman et al., 2005) as well as foster well-being and academic achievement in students (Waters, 2011). The Penn Resiliency Program (PRP) is an example of a school-based, teacher-led training program for students in late childhood and early adolescence. Programs in positive education, such as PRP, aim to promote emotional fitness through the cultivation of emotions-based knowledge and skills (Algoe & Fredrickson, 2011; Seligman et al., 2009; Seligman, 2012).

Many school-based positive psychology interventions are taught in literature or language courses, from great literature or from the students' own writing. The *gratitude letter* (Seligman, 2012) is an example of an empirically-validated positive intervention writing exercise used in these programs to strengthen or improve well-being, in which an individual exercises the character strength of gratitude by writing a letter unexpectedly to someone detailing the story of how their actions positively impacted the writer. Positive education programs teach the actions individuals can take to self-generate positive emotion – and self-regulating their behavior then becomes a resource for maintaining positivity through life's highs and lows.

An example of the largest scaled positive education initiative is the United States Army's Master Resilience Training (MRT) course, a 10-day "train the trainer" program for noncommissioned officers to learn the skills of resilience and then disseminate this knowledge to soldiers under their leadership. A part of the U.S. Army's Comprehensive Soldier Fitness (CSF) program, MRT is designed to: enhance soldiers' ability to handle adversity, prevent depression and anxiety, prevent posttraumatic stress disorder (PTSD), and enhance overall well-being and performance. The MRT course covers: 1) *Resilience* – teaches the fundamentals of resilience and clarifies common misconceptions, 2) *Building Mental Toughness* – builds skills that enable mental toughness and effective problem-solving, 3) *Identifying Character Strengths* – focuses on using both individual and team "top strengths" to overcome challenges and reach goals, and 4) *Strengthening Relationships* – builds relationship development skills through communication strategies and active constructive responding (Reivich, Seligman, & McBride, 2011). The course provides a foundation for training resilience skills and knowledge that will ensure soldiers are fit – both psychologically and physically.

**Future Directions for Positive Education.** Some schools are going beyond grades to focus on the overall health and well-being of students through positive education (Levin, 2012; Seligman et al., 2009). Successful schools like the Knowledge is Power Program (KIPP) - a national network of charter schools - engage students, teachers, and parents on a "shared journey," through whole-school initiatives for positive education focusing on character (Levin, 2012). Mastery Charter Schools in Philadelphia, a growing network of turnaround schools achieving dramatic gains in student achievement, views educational inequity as the civil rights issue of our time. Mastery Charter Schools utilize positive interventions in the classroom as well as in afterschool activities to target the development of character traits ([www.masterycharter.org](http://www.masterycharter.org)), specifically grit (Duckworth et al., 2007).

Both KIPP and Mastery are focused on developing grit in students to close the achievement gap, a term used to describe the disparity in educational performance of students from minority groups in economically depressed neighborhoods when compared to their white middle- or high-income counterparts (Ladson-Billings, 2006). The achievement gap has also come to encompass the disparity between overall performances of students in the United States in comparison to other nations. Presently, the field of education is actively seeking innovation to create and evaluate interventions and inform policy to increase student achievement. Teaching students grit holds significant promise for closing the achievement gap, but more research and assessment of evidence-based interventions are needed to better understand how to foster such traits in young people.

The success of the Penn Resiliency Program (Brunwasser, Gillham, & Kim, 2009) and the Army's MRT (Lester, Harms, Herian, Krasikova, & Beal, 2011) demonstrate the effectiveness of and diverse means of positive education initiatives. The United States Department of Education outlined some of the emerging intervention models addressing concepts related to grit in *Promoting Grit, Tenacity, and Perseverance: Critical factors for Success in the 21<sup>st</sup> Century* (Shechtman, DeBarger, Dornsife, Rosier, & Yarnall, 2013): approximately fifty approaches from practitioners and researchers are actively being developed as well as tested as ways to promote or teach grit, tenacity, and perseverance through structuring contextual factors, bolstering psychological resources, or some combination of both. Mindset interventions offer the most robust evidence in the development of grit related concepts (Snipes, Fancsali, & Stoker, 2012). However, to-date, no intervention program or education model has empirical research identifying the measurable outcome of increased grit in participants – given the novel nature of grit as a measurable construct, most empirical study has shown correlation (Duckworth et al., 2007) and moderation effects (Duckworth & Quinn, 2009) between grit and

other achievement relevant outcomes (graduation, GPA) rather than grit as an intervention outcome. If participation in intervention programs for education can effect or increase grit, this finding would be a promising breakthrough for the fields of both positive psychology and education. Most of all, this applied area of interest in the study of positive psychology offers hope for interventions and school-based initiatives to strengthen students' well-being, school engagement and academic achievement by increasing their grit.

### **The Present Study**

#### **Research Hypotheses**

The two preliminary hypotheses for this study are as follows:

1. Grit is related to positive youth development, and is therefore an appropriate measureable outcome within the Friend Fitness Program's assessment framework.
2. Participation in the Friend Fitness program will increase participants' levels of grit.

*Grit* is an important concept from positive psychology that relates to the pursuit of goals and perseverance in the face of obstacles. Scientific study of grit showed this character trait predicted long-term success and accomplishment even more so than intelligence (Duckworth et al., 2007), and ongoing research is investigating the underpinnings of this relationship (Duckworth, Kirby, Tsukayama, Berstein, & Ericsson, 2010; Duckworth & Kern, 2011; Duckworth, 2011), the measurement of grit (Duckworth & Quinn, 2009), and the methods to foster this important self-regulation related character trait in young people (Duckworth, Grant, Loew, Oettingen, & Gollwitzer, 2011; Duckworth & Allred, 2012). In the YMP framework, grit is a key mechanism for student achievement and school engagement. Grit and related non-cognitive concepts are part of a growing trend in education to actively develop the skills and traits other than intelligence that contribute to youth development and success.

This study posits that character traits, specifically grit, can be strengthened like a muscle. Interventions from the field of positive psychology and PYD offer evidence-based methods for research and assessment of how to foster such traits in young people. The PYD framework, specifically the Friend Fitness Program, provides adolescents a strengths-based approach for students to enhance their grit through so called “moments of choice” during an intense physical fitness workout within a uniquely designed social development strategy.

Prior to a more detailed literature review of the theoretical foundations, the Youth Mentoring Partnership’s Friend Fitness Program will be introduced as a new positive psychology intervention for education.

### **Intervention Description: YMP Friend Fitness Program**

The Youth Mentoring Partnership’s Friend Fitness Program is a mentoring intervention program that challenges students to give maximum effort through intense physical fitness exercises as a means to teach them the skills to set and achieve their goals. The mission of the Youth Mentoring Partnership (YMP) is to help kids overcome formidable challenges to be successful both today and in the future. Research on the Friend Fitness Program, which was funded by the Pennsylvania Commission on Crime and Delinquency, showed that the program demonstrates a unique and highly effective intervention for helping at-risk youth to reach their potential (Galbavy, 2004).

**Positive outcomes.** Renee Galbavy (2004) designed an in-depth evaluation of the effectiveness of the Friend Fitness Program. The qualitative data collection consisted of systematic open-ended interview questions (i.e. Tell me about the mentoring program) with 40 adolescent participants. These interviews were tape-recorded and then transcribed. The following themes emerged and are indicated by the percentage of participants whose responses mentioned: Some level of overall positive change (100%), increased confidence & self-esteem

(93%), improved health & physical well-being (83%), improved social abilities/behavior (73%), and academic improvements (60%). One of the most interesting affirmations of this program's value expressed by the interviewees was that it was a life-changing experience (23%), changing their lives for the better in some profound way.

**Participants.** The student participants are matched with adult or peer mentors. The program is offered free of charge, year-round to male and female students, grades 6-12. Students identified to be "at-risk", both athlete and non-athlete, are referred to the program primarily by school counselors, parents or other youth service professionals for a variety of reasons, including early warning indicators of potential drop out. The presenting problems, or reasons for referrals, of students include: social, emotional, academic, behavioral, familial, economic, or a combination of these challenges. Students are referred by school counselors, parents, or other youth-serving professionals as an intervention.

To reduce the stigma associated with being in an intervention program, participants are a mix of students: 20% high-risk, 60% at-risk, and 20% low-risk. "High-risk" students are engaging in delinquent behavior, abusing drugs and alcohol, or adjudicated delinquents. Some may have dropped out, been suspended, repeated a grade, or displayed unacceptable behavior at school. Others may be at a "high risk" for becoming victimized by crime or are in a population with a high incidence of dropping out (such as males of color, foster care youth, homeless youth). "At-risk" students are dealing with significant changes or transitions in their life circumstances, having difficulty connecting with a positive peer group, struggling to manage disability (learning, physical), victims of bullying, or experiencing problems with school attendance, academics, physical inactivity or poor behavioral conduct. Some of these students have poor relationships with school personnel, peers and/or parents. Low self-esteem, confidence, and perception of social support are common in this group. "Low-risk" students or

peer mentors may not exhibit any apparent risk, but are still exposed to broader community risk factors.

**Volunteer mentors.** Friend Fitness mentors guide their students through strength-training exercises while being a supportive and caring friend. Mentors offer undivided attention during workouts; help their students to focus on their personal strengths; collaborate and provide feedback as well as encouragement on goal-setting; and support, recognize, and celebrate students' accomplishments. Mentors track a student's goals, progress toward achievement, and individual effort (on a scale from 1-10) at each workout along with exercise repetitions and time for every workout session. Every student has a secure file on-site containing workout tracking sheets, report cards, and current as well as past goals.

**“Moment of Choice”.** Friend Fitness is unique for its utilization of intense physical fitness in a gym setting as the main environment for the mentoring process (Galbavy, 2004). Mentors assist student participants through a challenging, structured, strength-training regimen of super-slow manual resistance (seldom using weights) and cardio respiratory exercises, which creates an opportunity for students to learn in the moment. Most participants, students and mentors alike, say this is the most difficult workout they have ever done. Each exercise calls for a student to give maximum effort through a range of motion and, ideally, at the end of an exercise a student reaches muscular failure. At any given point in an exercise, there is what YMP staff and mentors call a “moment of choice.” This is the point where students choose between giving-up and persevering. This “moment of choice” occurs numerous times throughout the course of a workout. These experiential learning moments are one way that the program can theoretically help participants develop grit and perseverance. These opportunities to persevere through intense physical activity teach young people the effort it takes to achieve goals in the gym, in school, and in life.

**Goal-setting.** Friend Fitness Program motivates student (grade 6-12) participants to work toward goals they set for themselves. These self-determined goals (Brown & Ryan, 2004) provide intrinsic motivation which guides behavior toward self-regulation and development of character traits, like grit. Goal-setting is a central theme for the mentor/student relationship-building process and subsequent youth development. Students are trained by staff on setting SMART (Specific, Measureable, Attainable, Reaching, Timely) goals and guided in the goal-setting process by their mentor. The student-led goal setting process begins with a physical goal (preliminary goal) and expands to other areas of students' lives (academic, social, behavioral) as the mentor/mentee relationship matures. When students reach preliminary goals, they "earn their jersey" through a public recognition ceremony in which all participants briefly stop working out to celebrate their achievements. Recognitions for goals achieved or other significant accomplishments occur as they happen at workouts in front of the peers and adults participating in the program.

Friend Fitness mentoring relationships' duration are structured to last a minimum of one year, however, remarkably many students start in middle school and remain through high school graduation. Some students become peer mentors as juniors/seniors in high school.

### **Intervention Implementation**

There are four stages of the intervention implementation process: Student Intake Interview, Preliminary Goal Period, Student Matched with Mentor, Peer Mentor matched with Student. These stages will be described briefly in this section and separately, in Appendix A, outlined through the five elements of a positive intervention (Pawelski, 2009): activity, active ingredients, target system, target change, and desired outcome. A more comprehensive review of these elements is beyond this project's scope, however the following description of the

implementation stages is presented and will support the reader's understanding of how the Friend Fitness Program, as a positive psychology intervention, achieves its desired positive outcomes.

**Student Intake Interview.** Students are primarily referred to the program by school counselors. Once potential students are referred, parents/guardians must speak via phone with the Program Coordinator to determine if the program is a good fit for the student, and attend orientation/interview meeting with the YMP staff, prospective student and parent/guardian. During the interview, YMP staff helps parents/guardians and students understand what mentoring is, discuss their needs/interests, how mentoring can help them, and what they can expect from a mentoring relationship. The student also participates in a demonstration of the workout. This interview ensures students and parents/guardians have their questions answered, confirms the person-activity fit, and sets realistic expectations for desired outcomes. When the student commits to participate in the program, the *Parent / Student Contract* is signed.

**Preliminary Period.** During this phase of participation, the student participates in the intense physical fitness program by beginning to workout with mentors in the program and setting a preliminary physical fitness goal, directly related to the Friend Fitness workout. The student may work with multiple mentors in this period, with the support of the Program Coordinator, in an effort to determine who might be a good fit for a match-up. In the Preliminary Period, students are allowed three unexcused absences before they are officially warned that if the behavior continues they will be unable to participate. The focus at this stage is for students to achieve preliminary goals, and "earn their jersey."

**Student Participation, Matched with Mentor.** Students in this phase meet their mentor at a specified school-based or community-center workout site, a minimum of once per week to develop their mentoring relationship. They call their mentor and Program Coordinator (if unable to attend workout), set goals and achieve goals with their mentor, and engage in physical fitness / goal-

pursuit to the best of their ability at each workout. At this stage and the next, the social development strategy incorporates the ingredients of opportunities *for involvement in productive pro-social roles* (at weekly workouts), skills *to be successfully involved in these roles* (goal-setting) and *systems of recognition and reinforcement for pro-social involvement* (achievement recognitions).

**Peer Mentor Participation, Matched with Student.** As students mature and demonstrate personal responsibility, the Friend Fitness Program provides an opportunity to transition on to becoming a peer mentor to younger students. This process involves an application and interview for the student to reflect on and demonstrate their motivation to be a role model. Students are trained and then matched with a middle school student to guide them through the intense physical fitness workout, goal-setting, and recognitions.

### **Positive Psychology Intervention, PERMA Outcomes**

The intended outcomes of these intervention implementation stages include: relationships, achievement, and engagement. These are elements of PERMA that contribute to participants' improved well-being (Seligman, 2012) and will be described in greater detail in this section. The intervention implementation processes support positive outcomes, thereby backing the notion of the Friend Fitness Program as a positive intervention based on the previously described definition by Parks and Biswas-Diener (2013).

**Relationships.** The one-on-one relationship of two individuals is important for well-being. This positive association holds for mentoring relationships (DuBois, Portillo, Rhodes, Silverthorn, & Valentine, 2011) and other dyadic relationships (Gable & Gosnell, 2011). A recent meta-analysis identified mentoring as an intervention strategy which can serve two important functions - promotion and prevention - to simultaneously affect multiple domains (social, academic) of youth functioning (DuBois et al., 2011). The importance of relationships between individuals is difficult to understate. George Vaillant (2012) stated that, "the only thing

that really matters in life is your relationships with other people.” Relationships with other people can help individuals to capitalize on positive events in their lives (Gable & Gosnell, 2011). In the Friend Fitness context, a mentor can leverage the one-on-one relationship to listen for or ‘hunt the good stuff’ (Reivich, Seligman, & McBride, 2011, p. 29). Reivich termed this activity of actively seeking out the positives to overcome biases toward negativity for the purpose of enhancing positive emotions. Mentors then celebrate these good moments to create positive feelings and positive emotions (i.e. awe, elevation). These relationships also support bonding and trust. For example, one of the participants described how relationships are strengthened through fitness in this program (Galbavy, 2004): I talk to people about how I feel here ... this usually makes me feel better. Instead of getting outraged at home or sad I kind of have this idea that exercising gets my brain flowing while I'm working out... So I began thinking about what I can do to make my life better. (p. 93)

**Achievement.** The one-on-one relationships in Friend Fitness are accompanied by a relationship with a group of other students and mentors. Capitalization can also be used within the group context (Gable & Gosnell, 2011). In Friend Fitness, when a student reaches their goal they earn recognition in front of the group. These moments take place in the gym, everyone stops their workout to make a circle, and the mentor recognizes the student within the circle. These “earned recognition” sessions are very powerful moments. Students self-pride grows and according to Fowler and Christakis (2008) these affective states or behaviors can "spread" across the group. You may hear students quietly say, “if she can do that, I can do that!” You may also see others showing that they believe in others, outside of their one-on-one dyads. When multiple mentor-student pairs come together to do planks (plank parties), there is a beautiful display of competition and cooperation. Each individual has the goal to do a plank as long as they can. This creates competition between individuals, but also brings out cooperation. Someone

invariably will notice someone else struggling and say, “You can do it! You’re almost to a minute. Push through!” This balance between behaviors of competition and cooperation is a fundamental conflict of the human experience of multilevel selection and a source for creativity and pleasure – all in the midst of an intense physical fitness routine (Wilson, 2012).

**Engagement.** Perhaps most profoundly, through participants’ engagement with physical activity they actually improve their relationship with school. In the strength training context of Friend Fitness, students exercise their effort and will to learn what it takes to achieve goals. Effort is an important part of the education reform initiative known as school engagement: a process in which students make a psychological investment in learning, they try hard to learn and take pride not simply in earning the formal indicators of success (grades), but in understanding the material and incorporating or internalizing it in their lives (Fredricks, Blumenfeld, & Paris, 2004). As students work to achieve both physical and academic goals, they learn to enjoy both the process and the outcome. They begin to internalize notions of self-determination, self-efficacy, and self-esteem. Through successful completion of these physical challenges in the fitness context, participants develop skills and strategies (cognitive, social, and behavioral) that are transferable to other areas of their lives (school, home, and community). Furthermore, they gain a sense of themselves as strong and able to be successful in these multiple lifespan contexts because of their effort.

The nature of the strength training workout in Friend Fitness provides specific physical exercises to challenge students in a way that can be individualized to ensure appropriateness for the strengths and skills of the participant, creating moments of flow (Csikszentmihalyi, 1990). This ensures participants face formidable challenges that match their skills and reinforces students giving maximum effort to achieve goals – in the gym, at school, and in life. Flow is the reward for grit, one’s ability to overcome adversity and persevere through challenging “moments

of choice.” A student quote demonstrates how this learning is transferred to school and life: “Working with Friend Fitness and seeing how you set goals... showed me that working my ass off in the program paid off, and then it showed me that I can work that hard when I’m doing my schoolwork. I can put that kind of effort into other things” (Galbavy, 2004, p. 100).

### **Intervention Summary**

Youth Mentoring Partnership’s Friend Fitness Program is a school-based mentoring intervention program that challenges students to give maximum effort through intense physical fitness exercises as a means to teach them the skills to set as well as achieve their goals. Relationships with mentors help adolescents learn to overcome formidable challenges to be successful today and in the future. Engagement through intense physical fitness teaches kids to forge character traits such as grit through their effort.

The Youth Mentoring Partnership’s Friend Fitness Program is a positive intervention. After review of the conceptual definitions of positive interventions, the expected and reported outcomes described in this section support this designation. Based on prior research, students reported both improved academic performance and increased well-being as a result of the program (Galbavy, 2004). The following section of this paper will present the theoretical foundations of positive youth development (the framework on which the Friend Fitness social development strategy is based), positive interventions, and grit.

### **Review of Literature on PYD, PIs and Grit**

The following is a review of the relevant literature on interventions beginning with the broader framework of positive youth development (PYD). Given the Friend Fitness Program is based on this conceptual framework it will be helpful to fully understand the foundation of this strengths-based structure focused on positive developmental topics for youth, the positive outcomes these programs hope to achieve, and the positive method of mentoring utilized to

foster character in young people. This section drives deeper into the theoretical foundations of positive interventions (PIs) beyond that covered in the introduction of positive psychology. This theoretical review of the underpinnings of positive psychology interventions describes the mechanisms, outcomes, and underexplored methods utilized to promote well-being and character. Although presently there are no published empirical studies that identify interventions increasing grit in students, we review the literature related to this important character trait and propose a theory of how to strengthen this important trait in young people through grit interventions.

### **Positive Youth Development**

Positive Youth Development (PYD) refers to intentional efforts of other youth, adults, communities, government agencies, and schools to provide opportunities for youth to enhance their interests, skills, and abilities. PYD is a strengths-based framework of developmental processes, strategies and systems that enables the development of positive assets (Lerner, von Eye, Lerner, & Lewin-Bizan, 2009). Mentoring is a PYD strategy, which provides support and structure for adolescents to be agents of their own developmental growth (Larson, 2006). Caring adults, including mentors, support this process of positive development. Relationships with caring adults (Lerner, 2004) are very important for positive youth development and the best asset for resilience (Masten & Reed, 2002).

**Strengths-based Structure.** In the 1950's, United States Federal funding programs were initiated to address concerns regarding troubled youth (Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2004). A prevention approach to problem behaviors amongst youth evolved from this period in U.S. history. This problem-focus remained until the 1990's when researchers developed a broader focus on strengths and assets in regard to youth development (Catalano et al., 2004). This period of time was a major turning point for considering the promotion and

development of positive behaviors, rather than only viewing individuals from the deficit point of view of needing to correct adverse behaviors. This outlook has become known as PYD, which according to Damon (2004), focuses on the talents, strengths, and potential of youth. Empirical evidence demonstrates that increased positive youth development outcomes result from programs with a strengths-based approach and are likely to prevent negative behaviors (substance abuse, inappropriate conduct, delinquent and antisocial behavior, academic failure) in youth (Catalano et al., 2004).

Generally, participation in community youth organizations relates to a variety of positive outcomes, such as personal and interpersonal development (Larson, 2000). Mahoney, Lord, and Carryl (2005) identified that many organized youth programs incorporate features that promote positive development. Research showed that teenagers consistently experience higher levels of motivation and cognitive engagement in youth activities than in other contexts of their lives (Csikszentmihalyi & Larson, 1984; Larson & Kleiber, 1993).

With regard to youth development programs that involve sports/athletics, positive developmental outcomes are linked to participants' experience of psychological/emotional development, social development, and intellectual development that can come from involvement (Fraser-Thomas, Côté, & Deakin, 2005). However, Miller, Roberts, and Ommundsen (2005) investigated moral reasoning and self-predicted moral actions and found that the longer boys played some youth sports, the less moral they tested on their value of honesty, justice, and responsibility. How can there be such a difference? Bailey (2006) determined the benefits of sport-related youth development will not necessarily result directly from participation; the effects are likely to be mediated by the nature of the interactions between participants and the teachers or coaches who work with them. Contexts that emphasize positive experiences (enjoyment, diversity, and the engagement of all) and that are managed by committed, trained, and supportive

individuals, significantly influence the character of these physical activities which increases the likelihood of realizing the potential benefits of participation (Bailey, 2006). In other words, sport and physical activity do not always produce positive outcomes. Some programs may actually produce negative outcomes, however the contextual nature within the programmatic environment and the leadership of these programs effects whether defined positive outcomes indeed occur in PYD programs.

**Positive Outcomes.** New PYD vocabulary since the early nineties has led to more relevant discussions regarding youth development (Lerner, Almerigi, Theokas, & Lerner, 2005). After much analysis, there is a general consensus that it would be desirable for future studies to utilize what are known as the Five C's of PYD to better understand the outcomes of community-based programs (Lerner et al., 2005). These latent constructs are measureable and referred to in Table 1 as (Bowers et al., 2010): Competence, Confidence, Connection, Caring, and Character.

**Table 1.** The Five C's of Positive Youth Development

<b>Competence</b>	Positive view of one's actions in domain specific areas including social, academic, cognitive, and vocational. Social competence pertains to interpersonal skills (e.g., conflict resolution). Cognitive competence pertains to cognitive abilities (e.g., decision making). School grades, attendance, and test scores are part of academic competence.
Academic	Pertains to perceived competence in school performance.
Social	Pertains to interpersonal skills (i.e. conflict resolution) and perceived popularity among peers.
Physical	Pertains to cognitive skills related to athletic activities and self-perceived ability in sports and outdoor games.
<b>Confidence</b>	An internal sense of overall positive self-worth and self-efficacy; one's global self-regard, as opposed to domain specific beliefs.
Appearance	Emphasis on how comfortable one is with their physical appearance (i.e. looks and body image).
Positive Identification	Emphasis on how much one likes himself/herself, sense of pride, and outlook on the future.
Self-Worth	Emphasis on how comfortable one is with whom he/she is.
<b>Connection</b>	Positive bonds with people and institutions that are reflected in bidirectional exchanges between the individual and peers, family, school, and community in which both parties contribute to the relationship.
School	Emphasis on encouragement received and quality of relationships with teachers and students.
Neighborhood	Emphasis on quality of relationships with adults and their own importance within the community.
Family	Emphasis on the quality of relationship with parents.
Peers	Emphasis on the quality of relationship with peers
<b>Caring</b>	A sense of sympathy and empathy for others.
<b>Character</b>	Respect for societal and cultural rules, possession of standards for correct behaviors, a sense of right and wrong (morality), and integrity.
Values Diversity	Feelings on the importance of learning about people from a different race or culture, respecting their values and beliefs, and getting to know them.
Conduct Morality	Feelings on the importance of doing the right thing, and liking the way he or she behaves.
Personal Values	Feelings on importance of doing one's best, accepting responsibility, and standing up for their beliefs.
Social Conscience	Feelings on the significance of helping others, making the world a better place, and treating people fairly.

**Methods to Foster Character.** The social significance of character, specifically, can be traced back to the Greek philosophers of the 4<sup>th</sup> and 5<sup>th</sup> Centuries BCE. According to Compton (2005), the Greek “moralists,” Socrates, Plato, and Aristotle all thought it was important to discuss character, and most modern philosophical views are indebted to the analysis of this time period. Ever since this historic period, philosophers, theologians, and educators have been interested in both conceptualizing character, and finding ways to develop this virtue (Park, 2004). Recently, a significant national movement to promote character in young people has developed in the United States. In the twentieth century, the movement to promote character largely revolved around moral education to combat the moral decline identified in the mid-twentieth century (McClellan, 1999). However, the twenty-first century has brought a renewed focused on character in modern education reform to teach these traits in addition to academic knowledge, such as the ability to deal with failure and overcome adversity, to ensure the long-term success of students (Tough, 2013).

The importance of character is well established. However, it can be difficult to precisely define character. What is character? The handbook of *Character Strengths and Virtues* (Seligman & Peterson, 2004) provides the most comprehensive attempt to identify and classify our positive human traits. Drawing on the broad contributions of wisdom from the ancient Greek philosophers to the modern sciences of psychology and medicine, this classification provides a language for conversations on character. Character is often defined by what someone *does not do*, but if we are seeking to develop strengths in young people, a more active and thorough definition will enable these efforts to be more productive. Character strengths are the *active ingredients* that define our character. This work will help us to better understand our character and support kids to forge their character strengths.

Mentoring programs are well-established as an effective intervention for supporting character development and PYD in today's culture. There are more than 5,000 such programs in the United States serving an estimated three million young people (Herrera, Grossman, Kauh, & McMaken, 2011). In a typical program, each youth is paired with a volunteer from the community with the aim of cultivating a relationship that will foster the young person's positive development, health and well-being. There are several types of mentoring programs. Community-based mentoring programs take place in the community without a specific site. School-based mentoring (Herrera et al., 2011) takes place in schools and is growing rapidly as a strategy to support student achievement. A recent meta-analysis by DuBois and colleagues distills the evidence on the effectiveness of mentoring programs for PYD and identifies mentoring as an intervention strategy which can serve two important functions: Promotion and prevention; and to simultaneously affect multiple domains of youth functioning (social, academic) and public policy interests, such as improved academic test scores and well-being (DuBois et al., 2011).

Resilience research provides clues to the possible reasons for the success of mentoring programs. Resilience in the PYD context is defined as the capacity of those who are exposed to identifiable risk factors to overcome those risks and avoid long term negative outcomes such as delinquency or school problems (Rak & Patterson, 1996). The two factors that are frequently cited as predictors of resilience are: (a) the presence of someone to relate to; and (b) the ability to generate a relationship with them (Werner, 1995). Similarly, these two factors are the foundations of the mentoring concept. At-risk youth who are involved with at least one caring adult are more likely be resilient and withstand a range of negative influences (poverty, parental addiction, family mental illness, and family discord) compared to peers who are not involved in a similar relationship (Yates & Masten, 2004).

DuBois and colleagues (2011) argue for investments in the growing field of mentoring and suggest they will yield optimal returns. As such, there is a need for policy to be directed toward several critical areas of concern: (a) core practices for the screening and *training* of mentors that both research and common sense dictate to be essential elements of program quality, (b) facilitating ongoing refinement and strengthening of programs using the available *evidence* as a guide, and (c) fostering stronger collaborations between practitioners and researchers as a framework for evidence-driven dissemination and growth within the field.

Although the field of positive psychology does not have a conclusive definition for “positive intervention” (Parks & Biwas-Diener, 2013), the following theoretical elements are useful for understanding the concept of PYD and positive psychology interventions: Positive topics, positive mechanisms, positive outcomes, and positive methods. An understanding of these elements will clarify how YMP can be considered a new positive intervention, and how this program might offer a novel approach to foster the development of important character traits in youth.

### **Positive Interventions**

In this section, I review my definition that positive interventions are intentionally structured activities that shift individuals’ attention and strengthen individuals’ ability to self-regulate thoughts and actions – through the mind and the body. Positive interventions (PIs) involve a conscious shift of attention, which over time can physiologically transform our actions into habits, our goals into a life of meaningful purpose, and our positive characteristics into virtues. Self-control and self-regulation are critical for improving well-being, developing grit, and can be strengthened – like a muscle – through positive interventions. This section will review the theoretical underpinnings of positive mechanisms, outcomes, and methods for positive interventions.

**Positive Mechanisms.** Layous and Lyubomirsky (2012) reviewed the research and process mechanisms underlying the success of PIs, and broadly covered how PIs work and the sequencing of events which lead to positive outcomes. The article also explained the factors that impact interventions, however this work did not go into detail about specific outcomes. The authors break down these factors into the following: Characteristics of the individual, activity, person-activity fit, and the psychological processes which work to improve well-being. The individual factors include *motivation, belief, effort, social support* (key factor), alignment with cultural values, and baseline depression levels. The activity factors include *duration / variety* (important for their impact on adaptation), timing, and self-selection. *Person-activity fit* explains that “certain positive activities might work better for certain types of people” (Layous & Lyubomirsky, 2012, p. 12). The person-activity fit largely involves self-selection, activity choice, and timing. According to the literature on goal-pursuit (Sheldon & Elliot, 1999) and activity preferences (Shueller, 2010), there is evidence to indicate that person-activity *fit* matters and self-concordant *goals* yield the highest results. These described mechanisms can all be identified in the Friend Fitness Program, specifically the person-activity fit, self-concordant / intrinsically motivated goals, and activity preferences.

*How PIs Work.* In exploring the mechanisms of how PIs work, Pawelski (2009) posited that positive interventions can be reverse engineered to address specific positive outcomes. Pawelski builds on the preponderance of evidence that PIs are effective by providing a model for understanding positive interventions’ ingredients. More specifically, Pawelski provided a way to analyze and synthesize PIs through an analogy and critique of the present state of research. He used the analogy of the one-piece “footie” pajamas (which covers an individual from head to foot) to highlight the one-size fits all approach to PIs. Moreover, he points out that only about twelve PIs have been empirically evaluated. Given that one-size does not fit all, Pawelski (2009)

proposed a framework for evaluating PIs that has five elements: Activity, active ingredients, target system, target change, and desired outcome. As noted by others (Layous & Lyubomirsky, 2012; Shueller, 2010), there is recognition of the importance to combine interventions based on needs of individuals and groups. In future studies, this framework can be utilized to introduce a new positive intervention that combines multiple aspects of established interventions. In Appendix A, this model is used to describe the implementation elements of Friend Fitness.

*Key Mechanisms: Preferences and Intrinsic Motivation.* Schueller (2010) conducted an internet study to explore how individuals' *preferences* determine the effectiveness of positive interventions. This study of 792 participants revealed three groupings of subjective preferences in PIs: Active constructive responding and savoring; blessings and life summary; and gratitude visit and strengths. The results suggested that matching individuals to an exercise they enjoyed increases effectiveness. Schueller called for a framework tailoring programs to utilize multiple positive interventions that would be matched to individuals' preferences.

Sin and Lyubomirsky (2009) found PIs were more effective when participants are intrinsically motivated. Schueller (2010) cites other work (e.g., Sin & Lyubomirsky, 2009) on the importance of *intrinsic motivation*. Individuals' preferences and motivations influence self-control. Layous and Lyubomirsky (2012) further reviewed the research and process mechanisms underlying the success of PIs and emphasized the importance of an individual's intrinsic self-selection. In his framework for reverse engineering new PIs from their outcomes, Pawelski (2009) presented a descriptive model for understanding PIs and recommended using it to create new PIs. Schueller's study and recommended framework indicated preferences and intrinsic motivations can be used to tailor programs of multiple PIs to achieve positive outcomes (2010).

**Positive Outcomes.** One reason why these positive interventions are thought to be so successful is that they shift our conscious attention toward positive adaptive responses to internal

and external stimuli, which over time can physiologically transform our goals into self-efficacy beliefs, our actions into habits, and our positive characteristics into virtues. In this section, we will review the theoretical underpinnings supporting this author's conceptualization of how PIs achieve positive outcomes.

***PIs Consciously Shift Individuals' Attention.*** In *Talks to Teachers on Psychology*, William James (1899) explains the practical application of psychological theories as exercises in mental hygiene. James shows through his Lange-James Theory that a fundamental law of psychology is that our *actions* and *attitudes* yield *emotions* and *feelings* which help us to determine our momentary inner state. Action seems to follow feeling, but really action and feeling go together. Individuals can directly regulate actions / attitudes with conscious effort and thereby indirectly regulate the emotions / feelings that are less under our direct control. Thus, individuals can create be their own PI by consciously shifting their attention.

***Flow.*** Mihaly Csikszentmihalyi (1990) advanced theory and understanding of consciousness, and positive adaptive responses to life's challenges. He hypothesized that consciousness is not fully controlled by biological programming and instead can be directed by an individual. Consciousness has developed in such a way that humans can override the genetic or biological instructions and chart independent courses of action. We can choose action-responses to stimuli that are internal (i.e. thoughts) and external (i.e. other's actions) through dynamic mental representations of these events in our lives. For example, when some individuals are faced with hopeless situations, they consciously choose to transform them into challenges to be overcome, and successfully persevere despite the circumstances. To develop this type of trait, individuals must find ways consciously to shift attention through effort and goals. A portion of a previously referenced Friend Fitness student quote demonstrated this notion of consciously shifting attention, "Instead of getting outraged at home or sad, I kind of

have this idea that exercising gets my brain flowing...So I began thinking about what I can do to make my life better” (Galbavy, 2004, p. 94). This is not an easy task though, and may be more likely to occur when an individual possesses or develops character traits like grit.

*Goals, Motivation, and Self-Efficacy.* In goal setting theory, Edwin Locke (1996) explained how goals motivate individual action and performance. He explains goals as the “object or aim of an action” (p. 118). Internally, *motivation* is a psychological process one develops from the idea of what one wants. Externally, one must determine the object or conditional outcome which manifests this idea. These two aspects of a goal explain how the internal idea motivates the action to attain the measurable external object. For example, when one wants to run a marathon, he or she then determines a training plan to prepare. Locke’s *goal attributes* demonstrate the connection between thoughts and actions. Key attributes of goals include specificity, difficulty, and intensity. Repetition and prior experience of these attributes (i.e., a specific task, how difficult it was before, and the intensity of attention required) provide feedback to the body that is used in the active pursuit of a goal as well as in the establishment of future goals. This feedback is used in the psychological determination of *self-efficacy* (belief of whether a goal is attainable) and commitment to pursue the goal.

Maddux (2009) reviewed the theory of self-efficacy as a key determinant of human behavior, explaining that people’s actions are affected by their beliefs in their capabilities to produce desired outcomes. These beliefs motivate action. In the context of the YMP Friend Fitness Program, participants begin to develop mastery of goal-setting skills as they reach their initial fitness goal to “earn their jersey,” which supports their belief in the attainability of their personal goals and motivates a belief that through their effortful, active pursuit they develop the self-efficacy to achieve their goals.

*Habits.* William James (1892) described the science of how individuals can physiologically transform their physical actions into habits. James identified that habits are neural pathways formed in the brain. Like a walking trail, the physical actions and interactions of currents, discharged during a series of muscular contractions in our brain during repeated thoughts or actions, travel through our nerve-centers creating pathways. This scientific knowledge supports Csikszentmihalyi's ordering of our consciousness, because James identifies two effects of the physiological transformation of actions into habits: Simplifying the ordering of our actions, and reducing the conscious attention required to perform these actions. These theories describe how duration and repetition of PIs better our lives by creating habits, or virtues when righteously motivated. Healthy habits are developed around the weekly physical activity and socialization at workouts, specifically the structured sessions support the habits of: persevering through the "moment of choice," goal-setting and achievement, physical and social and civic engagement, interpersonal relationship development and virtuous behaviors – such as empathy and caring for others, in the case of peer mentors as well as adult volunteers.

*Virtue.* In *The Reality of the World: The Good Life*, Melchert (2002) shared Aristotle's theory that through our *actions* we can attain virtue. The theory and practical science discussed in this paper support Aristotle's claim that virtues are our choices and behaviors made according to right reason and practical wisdom. These choices and behaviors are our characteristics. When righteously motivated (i.e., caring for self, compassion for others) they may be called positive characteristics or character. PIs help individuals to shift their actions and exercise their conscious positive characteristics in thoughts and actions, developing virtue. In Friend Fitness everyone participates in the same physically demanding and painful workout, students find it very easy to say compassionate ("I feel your pain") and caring phrases. Through the group dynamic, participants socially learn virtuous actions through the role-modeling of their mentors

commitment to caring. A student quote from Galbavy demonstrates this best, in reference to the Friend Fitness Program (2004, p. 92):

I think I have become a better person socially, and I have a better feeling for who I am...I think that I have become more caring and almost more worrisome about people. Because the way I have been taken care of here [at the program] and the way that people help me, I want to do that for my friends. So now I really want to take care of them...I'm more of a caring person to like help my friends through anything. If my friends are having problems, and I don't care what it is, even if it's really deep and we have to go through some really hard times together, I'll do it.

This quote demonstrates how the Friend Fitness Program is developing virtue, and it also reveals how the repetition of a young person's involvement and interaction with caring adults provides an example for them to follow. In this quote, we also see grit – in the student's passion to help and care for others, something that clearly has become a goal for this young person.

***PIs Strengthen Self-regulation.*** There are many theories on why positive interventions might strengthen self-control, and several authors described different theories relating to self-control, illuminating the importance of behavior regulation in human health and happiness (Baumeister, Gailliot, DeWall, & Oaten, 2006; Maddux, 2009; Brown & Ryan, 2004; and Salovey, Caruso, & Mayer, 2004).

*Self-regulation is Like a Muscle.* Baumeister and colleagues (2006) identify the ability to regulate one's own thoughts and actions as an important personality process that enables people to conform to social norms, practices, and laws, as well as develop their individual skills and traits, like grit. Self-regulation is like a muscle, which can grow stronger with regular exercise, and similar to a muscle which has been over-exerted, it can be temporarily depleted resulting in a state of exhaustion known as "ego depletion" (p. 1780). Increasing one's self-regulatory

capacity reduces ego depletion. Individual differences in other variables (not related to self-control) may interact with ego depletion. Strengthening of self-regulation can be applied across domains. For example, participants in a two month fitness program experienced higher levels of self-regulation in other areas of life (Baumeister et al., 2006). These findings are pertinent to the Friend Fitness intervention. Self-regulation can be strengthened like a muscle, but this process is multifaceted, impacted by individual differences and other external variables – which indicates the need for intrinsic motivation, personality-fit, and combination of multiple PIs to develop this critical characteristic.

*Motivation and Self-Regulation.* Other theories on self-control suggest that it might impact self-regulation. Brown and Ryan (2004) review how self-determined autonomous motivation guides behavior toward self-regulation and psychological well-being. Motivation can have varied effects on well-being. Motivation, which is intrinsic to one's autonomous self, is particularly important and a source of satisfaction across cultures. In summary, the strength model of self-regulation as a muscle provides an analogy, quite fitting for the Friend Fitness Program, describing how positive interventions improve well-being by increasing conscious self-control of individuals' thoughts and actions.

*Teaching Self-regulation.* Regulation of emotions and behavior are very important for positive youth development (DuBois et al., 2011). Regulation of emotions and behavior also being like a muscle (Algoe & Fredrickson, 2011; Baumeister et al., 2006), it can grow stronger with regular exercise.

Physical fitness and strength training, as uniquely utilized in the Friend Fitness Program, provide a context for teaching self-regulation and other concepts of positive psychology. Intervention programs can support flourishing and well-being by facilitating positive outcomes

of engagement and achievement (Seligman, 2012). Conscious goal-setting (Locke, 1996) is an evidence-based means to motivate individual achievement and effort.

**PIs and the Mind-Body Context.** An important connection exists between the psychological systems of the mind and physiological systems of the body, a mind-body connection. Much attention is given to the mind's influence over the body; however there is evidence that demonstrates the positive impacts of the body on the mind. Methods for positive interventions that incorporate and combine physical activity, as well as the mind-body connection, are an underexplored area of PIs in the field of positive psychology.

*Physical Activity PIs.* Mutrie and Faulkner (2004) demonstrated, through a thorough review of psychological and epidemiological research, that physical activity positively impacted mental health. This evidence indicated physical activity's preventative and therapeutic functions, positive effect on quality of life and coping with mental disorders, as well as what the authors refer to as "feel good function" (p. 152). Physical activity improved well-being, mood, affect, and sleep quality; reduced stress; enhanced self-esteem; and supported cognitive functioning. The underlying mechanisms related to the positive impact of improved physiology on psychology are understudied and further investigation in this area of research, referred to as the *somatopsychic principle* or body-mind principle, offers opportunities for advancing understanding methods to combine PIs with physical activity. Hefferon and Mutrie (2012) investigated physical activity as an applied intervention medium for some the primary theories of positive psychology: enhanced positive emotions (Fredrickson, 2009), psychological well-being (Ryff & Singer, 1996; 2006), resilience (Biddle & Mutrie, 2008), motivation (Deci & Ryan, 2008), post-traumatic growth (Hefferon, Greal, & Mutrie, 2008) and developing individual strengths through physical activity. A healthy body's relationship to a healthy mind, Hefferon and Mutrie admit, is not a new or revolutionary idea, but recently increased knowledge about the

integration between physiological and psychological processes has revealed several mechanisms for enhancing well-being through the body's thermogenesis, endorphins, serotonin, and neurotransmitters (2012). There is also a growing body of evidence which has identified strong correlations between physical activity in adolescents with mental health and well-being (Biddle & Asare, 2011) as well as academic achievement (Coe, Pivarnik, Womack, Reeves, & Malina, 2012) and cognitive performance (Keeley & Fox, 2009). Hefferon and Mutrie (2012) described participation in physical activity as an exceptionally effective strategy for increasing the well-being of both individuals and societies.

*Body-Mind Theory.* Shusterman (2006) presented his body-mind theory that “the body is an essential and valuable dimension of our humanity. It should be recognized as a crucial topic of humanistic study and experiential learning” (p. 1). Linking the body-mind connection through the so-called social humanities, Shusterman introduced a new paradigm of philosophical study (2006). His main point was that the body is a subjective source of experience and at the same time is objectively creating its experience. He argued the body should be elevated as a source of mental well-being. The field of somaesthetics is the study of and cultivation of how we both experience and use our bodies as a site of sensory appreciation and active self-creation. Shusterman related the impact of individuals' actions on their thoughts influence the experience of knowledge, love, art, and athletics: “Though athletic exercise may be a means to health, we enjoy such exercise in itself as part of what health actually signifies—the ability to enjoy strenuous movement. And bodily health itself is enjoyed not just as a means to enable laboring for other ends; it is enjoyed *intrinsically* as an end in its own right” (p. 17).

*An Underexplored Method for PIs.* This evidence demonstrates the positive impacts of the body on the mind in physical activity as positive intervention. Shusterman's (2006) work as well as Hefferon and Mutrie's (2012) research represent a new understanding of the mind-body

connection, and provide promising evidence of the connection between physical health and mental health and well-being (Biddle & Asare, 2011) as well as academic achievement (Coe, Pivarnik, Womack, Reeves, & Malina, 2012) and cognitive performance (Keeley & Fox, 2009) in adolescents. The complete study of PIs should also seek to advance understanding of the mind-body impact and future PIs ought to consider implementing and combining physical activity.

*The Need for Physical Activity PIs.* Health research indicated that worldwide people do not engage in sufficient physical activity to benefit their health and this is creating an obesity epidemic (Popkin & Doak, 2009). Reducing the amount of people in this category by just one percent could save millions of lives and billions of dollars (WHO, 2006). Childhood obesity has more than doubled in children and tripled in adolescents in the past 30 years (Ogden, Carroll, Kit, & Flegal, 2012). Governments throughout the world are investing significantly in the promotion of healthy lifestyles. Healthy lifestyle habits, including physical activity, can lower the risk of becoming obese and developing related diseases (USDHHS, 2010). Schools play a critical role by establishing a safe and supportive environment with curriculum, policies and practices that support healthy behaviors. However, public health interventions designed to combat these trends have produced mixed results due in large part to the fact that physical activity is a complex human behavior and theory-driven research applied to natural populations remains inadequate to provide guidance. When developing strategies to increase levels of physical activity, recreation in the form of physically active leisure is considered to play an important role (WHO, 2006). Unfortunately, such strategies fail to target other aspects of daily life including educational and familial that increase the social value and importance of recreational involvement (Sallis et al., 2006). The efficacy of programs designed to increase and sustain active lifestyles may well rest upon their ability to promote social engagement helping

individuals build social connections through physical activity, similar to the social development strategy utilized within the Friend Fitness Program.

*Positive Psychology and Physical Activity PIs.* The capacity to understand and increase participation is not only important for the recreation industry in delivering these opportunities, but extends to community organizations charged with protecting the public interest and for researchers seeking to increase well-being. Strategies incorporating physical activity PIs to promote active lifestyles can be used to assist targeted populations to engage in regular physical activity to prevent physical illnesses and promotes mental health and well-being. *Positive health* (Seligman, 2008) takes an innovative approach to health and well-being that focuses on promoting people's positive health assets—strengths that can contribute to a healthier, longer life. Mentoring is a framework that provides multidimensional support and structure for the development of positive assets. Participation in physical activity is theorized as an exceptionally effective strategy for increasing the well-being of both individuals and societies (Hefferon & Mutrie, 2012).

*Summary.* Most of the current positive psychology interventions are primarily concerned with people from their necks up. Effectively, PIs shift individuals' attention and strengthen individuals' ability to self-regulate thoughts and actions. Opportunity exists for applying positive psychology that engages the whole person. Presently, positive psychology interventions rarely utilize the body's influence on the mind, instead focusing more on cognitive thoughts to regulate behavior, opposed to the behavioral action which can influence thoughts or cognitive function. Application of positive psychology must give greater consideration for individuals' bodies and minds. Physical activity PIs can be utilized in schools to influence actions, behaviors toward increased engagement (in education as well as healthy physical activity) and achievement.

## Grit

In this section, I review the present literature related to this important character trait and propose a theory of how to strengthen this trait in young people.

**Definition.** Grit is passion and perseverance for the achievement of long-term goals especially in the face of obstacles (Duckworth et al., 2007). This character trait enables students to succeed in the struggle to overcome adversity, bounce back from failure and achieve their goals. *Grit* is described in terms of persistence over *years* to attain difficult long-term goals. Duckworth and colleagues characterize this character trait with respect to stamina, emphasizing the role of effort, interest, and passion in staying on course over the long-run (Duckworth et al., 2007).

**Achievement.** Some individuals can transform hopeless situations into challenges to be overcome, just through the force of their personalities (Csikszentmihalyi, 1990). Perseverance despite obstacles and setbacks is arguably one of the most important traits for succeeding in school and life. Tough (2011) explicitly questioned whether in fact failure and grit to overcome challenges are the secrets to student achievement, and identified opportunities to fail and develop grit are simply not present in much of modern education – particularly in the United States’ underperforming urban schools.

Education reform is seen by many as the civil rights issue of our time. The “Achievement Gap” refers to the disparity in educational performance of students from minority groups in economically depressed neighborhoods when compared to their white middle-income counterparts (Ladson-Billings, 2006). The achievement gap has also come to encompass the disparity between overall performances of students in the United States in comparison to other nations, which was covered recently from the perspective of students in the WNPR Connecticut

Public Radio special 'Left Behind, Dropping Out' (2012). In short, students in the United States are underachieving. Why?

Duckworth and colleagues (2007) have studied character strengths of students who succeed and the character deficits of students who fail in multiple, super-challenging situations: United States Military Academy, National Spelling Bee, and Ivy League Universities.

Duckworth's theory uses the equation for distance as a metaphor (Seligman, 2012, p. 110):

What is achievement, after all, but an advance from a starting point to a goal? The farther the goal is from the starting point, the greater the achievement. As distance is the multiplicative product of speed and time. Achievement is the product of skill and effort.

Achievement = Skill x Effort.

Grit entails working strenuously through challenges, maintaining effort and interest over years despite adversity, failure, and plateaus in progress (Duckworth et al., 2007). The gritty individual approaches achievement as a marathon, specifically this involves stamina and the fortitude to continue on through disappointment. For example, boredom signals to some that it is time to change trajectory, while the gritty individual stays the course.

In a series of studies, Duckworth and colleagues discovered a breakthrough connection between grit and achievement (2007). Higher levels of grit were more highly associated with cumulative grade point average in an Ivy League sample when compared to those with lower grit levels. Grit predicted retention of cadets at the United States Military Academy after their first summer in two classes more so than the Army's entire battery of psychological assessments (Duckworth et al., 2007). National Spelling Bee participants with higher grit scores typically work longer than less gritty peers, ultimately resulting in better performance (Duckworth et al., 2007). This series of studies provided empirical evidence that the individual difference conceptualized as grit can account for significant variance in *achievement* across a variety of

settings. In a follow-up study, Duckworth and Quinn (2009) replicated these findings and found longitudinally among adolescents grit was directly related to GPA as well as, inversely, related to hours spent watching television. Many argue that grit is key to closing the achievement gap and teaching children in the United States to succeed (Tough, 2013).

**Engagement.** Seemingly contradictory to grit, Mihalyi Csikszentmihalyi (1990) describes the concept of *flow* as the optimal psychological state that occurs when there is a balance between perceived challenges and *skills* in an activity. This *temporary* state of optimal experience is characterized by effortless attention, absence of time awareness, and absence of emotion (Peterson, 2006). Research shows the flow state of engagement (Rathunde & Csikszentmihalyi, 2005) motivates student achievement and (Peterson, 2006) the presence of flow in adolescence may improve health as well as long-term achievement in creative domains. Grit over the long-run and flow in the moment are complementary concepts of long- and short-term psychological engagement in the pursuit of goals which work together to support student achievement.

**Grit and Concepts Related to School Engagement.** The concepts related to *grit* are *academic tenacity, academic perseverance, persistence, behavioral / cognitive engagement, and resilience*. Common terms used to describe these concepts include a tendency to keep going in the face of failure, adversity, obstacles, and setbacks. A common theme with grit and the related concepts are the exertion of *effort* and the *will* necessary to achieve goals.

Dweck, Walton, Cohen, Paunesku, and Yeager (2011) relate the concept of *academic tenacity* in terms of the *mindsets and skills* that allow students to set *short-term* concerns aside to withstand challenges and setbacks en route to long-term goals. *Mindsets* refer to how students frame themselves as learners, their learning environment, and their relationships to the learning environment. These include beliefs, attitudes, dispositions, values, and ways of perceiving

oneself. *Skills* refer to strategies, such as planning, monitoring, and modifying actions.

*Academic perseverance* (Farrington et al., 2012) is similar to academic tenacity, the definition includes grit and persistence in this concept, and incorporates the additional notion of *effortful control* (i.e. delayed gratification, self-discipline, and self-control). Mindsets and skills were incorporated into Farrington's overall model of non-cognitive factors in academic success, but separated these out from the construct of academic perseverance. Similar to and directly including grit, these theoretical concepts are incorporate both skills and effort – which can be learned by individuals.

Fredricks, Blumenfeld, and Paris (2004) define *behavioral engagement* as the active involvement necessary for achieving academic goals and *cognitive engagement* which encompasses the effort necessary to master complex skills. Examples of these in the Friend Fitness context, behavioral engagement would describe the activities related to an academic goal of improving math by one letter grade (studying nightly, doing extra practice problems, seeking additional academic support) whereas cognitive engagement relates to the “moments of choice” where a student applies the necessary effort to carry out these activities. Fredricks and colleagues introduced these concepts in their review of the education reform initiative to improve student achievement and motivation known as *school engagement* (2004).

*Persistence* is very similar to grit, but there are important differences among these concepts with respect to time. As previously noted, Duckworth and colleagues describe grit in terms of persistence over *years* to attain difficult long-term goals (2007). However, persistence in the face of challenge can also be important at shorter timescales (i.e. micro-moments or “moments of choice”) and may have a variety of different contributing factors beyond interest and passion.

**Resilience.** This concept is also closely related to grit. There is an extensive body of literature for this concept and important overlap with grit, tenacity, and perseverance. Research and intervention work around resilience focuses on the dynamic process through which individuals “bounce back” from failure, adversity and traumatic life experiences.

Resilience research investigates which social and emotional assets within the person and the environmental context are most protective in the face of risk, supporting positive outcomes. This concept is an outcome of positive youth development and a primary focus of study for many in positive psychology. Resilience is the ability to persevere and adapt when things go awry. Resilience depends on one’s thoughts, specifically on how one thinks about adversity (Reivich & Shatte, 2002). Like a muscle, resilience can be learned and strengthened. Individuals can be taught to cultivate seven abilities: emotion regulation, impulse control, empathy (for self and others), optimism, causal analysis, self-efficacy, and reaching out (Reivich & Shatte, 2002). An important distinction between grit and resilience is the attainment of goals specifically. Rather than being goal-directed, resilience is a process of positive adaptation in the face of risk. Resilience literature offers insight into the process of persevering toward goals in the face of adverse life events.

Together, these concepts represent a growing body of literature and theory-based practice referred to as school engagement. In this emerging field of study on school engagement, there is a need to clarify both the terminology and conceptualizations. After reviewing these related terms and definitions, the United States Department of Education presented this broader definition of grit in *Promoting Grit, Tenacity, and Perseverance: Critical factors for Success in the 21<sup>st</sup> Century* (Shechtman et al., 2013): Perseverance to accomplish long-term or higher-order goals in the face of challenges and setbacks, engaging student’s psychological resources, such as their academic mindsets, effortful control, and strategies and tactics.

**Measures of Grit.** Duckworth's construct of grit is measured by the Grit Scale, and is highly correlated with *success* more so than traditional measures of skill and talent such as IQ, Big Five Personality tests, and the United States Military Academy psychological evaluations (Duckworth et al., 2007). These findings garnered well-earned attention (Tough, 2011) which explicitly questions whether in fact failure and grit to overcome these challenges are the secrets to student *achievement*. In 2009, Duckworth and Quinn found additional support for the Grit construct when they developed and validated a more condensed version of the Grit Scale (Grit-S) by removing four of the previous items. This short-form survey predicted academic achievement among African American students in predominately white universities (Strayhorn, 2013) and further supports the notion that grit holds for closing the achievement gap. Like many character traits and individual psychological constructs previously described, grit is like a muscle and can be strengthened.

**Grit Interventions.** Intervention programs can support the development of skills, such as self-control and self-regulation among others, which facilitate individual achievement and thereby increase individual well-being. For example, conscious goal-setting (Locke, 1996) is an evidence-based means to motivate individual achievement and effort. Presently, the field of education is actively seeking innovation to create and evaluate interventions / policy to increase student achievement. The United States Department of Education outlined some of the emerging intervention models and public policy in *Promoting Grit, Tenacity, and Perseverance: Critical factors for Success in the 21<sup>st</sup> Century* (Shechtman et al., 2013). Experts in the field of positive psychology call for the creation and evaluation of more empirically valid positive interventions (Pawelski, 2009). Some advocate for the combining of interventions (Layous & Lyubomirsky, 2012; Shueller, 2010). Mentoring is an empirically tested and effective intervention strategy for

positive youth development. Mentoring combines well with goal-setting (Locke, 1996) and physical activity (Murtie & Faulkner, 2004; Heffron & Mutrie, 2012).

The strategy described previously, the Youth Mentoring Partnership Friend Fitness Program, could very well support the impact of existing whole-school initiatives or stand alone as a new research initiative to validate a new positive psychology intervention for improving both health and education in the United States. The Friend Fitness Program uses intense physical activity to create a “moment of choice” where students consciously choose to persevere through an experience that is both physically and mentally challenging. Overtime, this active behavior becomes a habit which is reinforced by an environment which is designed for social development and oriented toward positive development for the participant. Specifically, the development is focused on the students’ individual set and intrinsically motivated goals. We have observed that together these help participants to develop the trait of grit through their weekly practice of perseverance, the passion developed as they pursue their self-concordant goals, and a social network that provides supportive relationships enabling students to learn what it takes to succeed in reaching their goals and learning from their failure – muscular failure.

### **Method**

The Youth Mentoring Partnership’s Friend Fitness Program was designed to utilize the framework of PYD and evidence-based practices of mentoring to guide efforts to effectively support positive outcomes of engagement, relationships, and achievement for adolescent participants. The longitudinal assessment conducted in partnership with the Temple University’s Sports Industry Research Center is focused on the assessment of positive programmatic outcomes – the timely and enduring change that occurs within the participants of the program over time, *as a result* of participation in Friend Fitness. A research and evaluation valuing culture is maintained within the Youth Mentoring Partnership’s Friend Fitness Program. Our

longitudinal assessment supports three important objectives: (a) defining targeted positive outcomes deemed as essential elements of program quality, (b) facilitating ongoing refinement and strengthening of programs and ensuring continuous improvement of practice using outcome and process data, and (c) fostering stronger collaborations between practitioners and researchers as a *framework for evidence-driven dissemination* and expansion of the program, as well as for influencing public policy in program-related fields (i.e. education, mentoring, adolescent health).

### **Procedure**

Participants also take a 95-item pre-program assessment when they enter the program followed by twice yearly follow up surveys at six month intervals administered by the Temple University's Sports Industry Research Center (SIRC). Assessment occurs at regularly scheduled workouts, which take place at specified Friend Fitness workout sites, where students are expected to attend weekly through the course of their participation with both the program and the study. Participants complete the assessment online using iPads during a program session or through a paper survey, facilitated by SIRC staff.

Participants will not be linked by name to their data, but they will be coded so that we are able to match data from different collections to the same participant. Confidentiality of individual results will be maintained by SIRC, as stipulated by Temple University's Internal Review Board.

### **Participants**

For the present study, adolescents took surveys as a part of a cross-sectional sample of participants with two data collections in Fall 2012 (N=84, Sample 1) and Spring 2013 (N=55, Sample 2). These cross-sectional samples did not survey every student in the program (N=139), however a portion of participants were able to complete the pre-program and mid-program assessments within their initial six months of participation (N=33). Adolescents participated in

this study over the course of their involvement with the Youth Mentoring Partnership's Friend Fitness Program. The first collection of responses were collected in Fall 2012, the collection of responses was in the Spring of 2013 and the pre-/post-surveys were aggregated from four program sites (Upper Main Line YMCA, Great Valley YMCA, Conestoga High School and Mastery Charter Shoemaker Campus) in the Greater Philadelphia area. Socio-economic status (SES) was not tracked for participants, however it can be assumed to vary as participants reside in Chester County (high SES) and West Philadelphia (low SES).

### **Measures**

Data was gathered using surveys administered onsite by staff from the Sport Industry Research Center (SIRC) at Temple University. The survey adapted for this study consists of 95 items, and respondents either digitally recorded their answers on iPads provided by the SIRC staff, or responded to a printed version with pen/pencil. Respondents were identified by birthdates to integrate individual responses over time with the psychographic assessment of: Grit, Involvement (with Program, with weight training and/or cardio activity), Commitment (to Program, to weight training and/or cardio activity), Satisfaction, and the Positive Youth Development (PYD) 5 C's (Character, Competence, Caring, Connection, and Confidence).

The assessment measures were empirically validated surveys or adapted from an empirically valid survey.

*Demographics.* Individual demographic data was provided by Friend Fitness staff, which included birthdate, sex, etc. and this information was gathered from the program application's parental consent form.

*Grit.* Short Grit Scale or Grit-S (Duckworth & Quinn, 2009). Grit-S is an 8 item scale with a 2-factor structure, scored on a 5-point Likert, measuring consistency of interest and perseverance of effort.

*Involvement.* Psychological Continuum Model (PCM) (Funk & James, 2001). The PCM is a 9 item scale which provides a stage-based developmental framework of recreational involvement. Engagement in recreational activities progresses along four general hierarchical stages: Awareness (I know about fitness), Attraction (I like fitness), Attachment (I am fit), or Allegiance (I live for fitness). The framework suggests participating and engaging in continuous physically active leisure explains how personal, psychological and environmental determinants increase the level of psychological connection with an activity, through social and individual processes.

*Commitment.* Three-Component Model of Organizational Commitment (Meyer & Allen, 1991). This 6 item scale uses a 2-factor structure measuring commitment to the Friend Fitness Program (i.e. the organization) and the activity (i.e. strength training, cardio exercises) along three-components: affective (i.e. WANT to continue), normative (i.e. OUGHT to continue), and continuance (i.e. NEED to continue).

*Satisfaction with program.* Adapted from the Athlete Satisfaction Questionnaire (ASQ) (Riemer & Chelladurai, 2000). The ASQ uses a 16 item Likert scale selected from a menu of 50 questions broken into four sub-scales: Individual Performance (absolute performance, improvement, and goals), Ability Utilization (is mentor maximizing potential), Personal Treatment (social support and positive feedback), and Training and Instruction (technical skills). Additional questions were created and existing scales adapted to ensure appropriateness for the fitness-based mentoring context.

*Positive Youth Development.* Short-Form Five C's of Positive Youth Development (Bowers et. al, 2011) and 5 C's of Positive Youth Development (Lerner, 2005). PYD is a composite score scaled from 0 (weak) to 4 (strong) formed from the 5 C's (Character, Connection, Caring, Competence and Confidence) outlined previously in this report. Character

is an 8 item scale with 4-factors (social conscience, values diversity, conduct behavior, personal values). Competence is a 6 item scale with 3 factors (academic competence, social competence, physical competence). Caring is a 6 item scale measuring sense of sympathy and empathy for others. Connection is an 8 item scale measuring 4 factors (connection to family, connection to neighborhood, connection to school, and connection to peers). Confidence is a 6 item scale with 3 factors (self-worth, positive identification, and appearance).

### **Data Analytic Strategy**

Data for this analysis include all responses from the cross-sectional data collections in Fall 2012 and Spring 2013, as well as the pre-program and mid-program data collection assessments of adolescent participants of the Youth Mentoring Partnership's Friend Fitness program. Results from the psychographic assessments were synthesized by the Temple University SIRC with demographic data to: (a) Identify if a correlation exists between the Grit-S scale and the PYD composite measure using a simple bivariate correlation analysis. This will allow us to determine whether grit is related to the Friend Fitness Program's targeted outcome of positive youth development. (b) Examine using a paired sample t-test whether any change in Grit-S scores occurred within individual participants during their initial 6 month period with the program, *as a result* of participation in Friend Fitness.

## **Results**

### **Descriptive Statistics**

For the cross-sectional data collections, 139 youth from the Friend Fitness Program filled out questionnaires on grit ( $M = 3.28$ ,  $SD = .58$ ) and PYD ( $M = 3.89$ ,  $SD = .53$ ).

### **Grit and PYD Correlation**

The bivariate correlation analysis of PYD and grit indicated a strong positive relationship between grit and PYD ( $r = .45$ ,  $p < .01$ ).

### Participants Increased Grit

Thirty-three participants took the pre-program Grit-S survey ( $M = 3.22$ ,  $SD = .61$ ) and within six months took the mid-program assessment ( $M = 3.36$ ,  $SD = .59$ ). From pre- to mid-assessments students showed marginal increases in grit with a medium effect size ( $t[32] = -1.77$ ,  $p = .09$ ,  $r = .30$ ). Although this difference did not reach conventional benchmarks for statistical significance ( $p \leq .05$ ), the trend indicated a positive direction and that a larger sample size might reach traditional measure of significance.

### Discussion

These promising preliminary results suggest a link between involvement in the Friend Fitness Program and grit. The correlation between grit and PYD indicates that the Grit-S measure is related to the construct of PYD, which supports this study's first hypothesis. This finding provided support for the appropriateness of grit measureable outcome within the Friend Fitness Program's assessment framework and, perhaps, in other PYD programmatic contexts.

Participant's grit increased. Although this difference in pre- and mid- assessments did not reach conventional benchmarks for statistical significance, the trend was marginally significant, and the medium effect size ( $r = .30$ ) indicated a substantive initial finding on the variance in student's increased grit that is explained by this model. Although the sample size is small ( $N = 33$ ) and the period of time between data collections was six months or less, this finding provides preliminary support for the hypothesis that participation in the Friend Fitness Program increases participants' levels of grit.

These preliminary empirical quantitative results are not conclusive, however they are very promising and support the continued longitudinal study of this intervention as an innovative model for fostering important character traits in youth within the fields of positive psychology and education. Additionally, this work offers an important area for future research into

understanding connections between enduring dispositions (i.e. traits) and “micro-level” process factors (i.e. “moment of choice”).

### **Limitations**

This longitudinal evaluation of the Youth Mentoring Partnership’s Friend Fitness Program is a collaboration with the Temple University’s Sports Industry Research Center, underway since Fall 2012. Therefore, less than a year of prospective data collection has occurred thus far, which limits the internal and external validity for any claims that could be drawn from these data. The sample size for pre- and mid-program assessments was limited by the number of students enrolled in the program. However, we anticipate participation will continue to grow as the Friend Fitness Program enrolls new students on rolling basis. The present study lacks a control group, but efforts are underway to implement a waitlist control. Subsequent data collections will continue to increase the statistical power of the dataset and the analyses.

### **Future Directions**

The Youth Mentoring Partnership (YMP) is presently focused on the scaling of the Friend Fitness positive intervention reviewed in this study. Specifically expansion of the program will focus on growth within the Philadelphia region in partnership with the nationally recognized network of educators and administrators turning around failing public schools, Mastery Charter Schools. Through the process of scaling this intervention across Mastery’s growing network of schools, YMP will work in collaboration with researchers to identify the innovative practices which presently exist in the Friend Fitness Program as well as embed additional effective, evidence-based practices. Increasing participation and continuing the longitudinal study will require an increase in funding – which will be actively sought by the

YMP organization. Research funding will be utilized to continuously improve the intervention program, based on the data.

High school graduation is an economic imperative in today's global economy driven by knowledge and innovation. As the US seeks to increase graduation rates and reform education, schools and policy makers are seeking methods for developing grit in students, alongside efforts to educate the whole child – their mind as well as their body. In 2012, the City of Philadelphia: graduated an underwhelming six out of 10 students, a 61% rate that is the highest graduation rate in recent memory and is far below the national average (Socolor, 2012); childhood obesity was identified as a public health priority given the city-wide rate of 56.5% children (6-17 years old) were overweight or obese in 2009, again an increasing trend (Shwartz, 2012) and above the national average (Ogden, Carroll, Kit, & Flegal, 2012). As a fitness-based mentoring strategy, the Youth Mentoring Partnership's Friend Fitness Program, could very well complement the efforts of existing whole-school initiatives or stand alone as a new research initiative to utilize this newly identified positive psychology intervention for improving education in the US through physical activity. Physical activity PIs can be utilized in schools to influence actions, behaviors toward the outcome of increased engagement (in education as well as healthy physical activity), relationships, and achievement.

The YMP Friend Fitness Program is presently an intervention strategy serving low-income areas of Philadelphia and several public school districts in affluent suburban communities. Continuation of the longitudinal empirical study can investigate what, if any, impact does socioeconomic status have on students' levels of grit (pre- and post- intervention).

Prospectively, this study can investigate the impact of the YMP Friend Fitness intervention on high school and college graduation, as well as the ability of grit to predict actual educational and professional success. Additionally, an opportunity exists to study how individual

characteristics (confidence, risk factors, socioeconomic environment) prior to intervention indicate groups which may benefit more from the development of grit (i.e. could grit be more important for students with troubled backgrounds or do participants with specific risk factors experience a greater increase in positive youth development with increased grit).

### **Conclusion**

This study presented the theoretical foundations for and initial support of a longitudinal evaluation of the *Youth Mentoring Partnership's Friend Fitness Program*. Positive psychology interventions, like YMP Friend Fitness, offer an opportunity to teach students the character trait of grit which enables students struggle through muscular failure and physical challenges that improve health while improving the ability of participants to achieve their goals. In the process, Friend Fitness provides perhaps the most important ingredients for students' well-being and the development of grit – engagement, relationships, and achievement.

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**Appendix A: Five Elements of a Positive Intervention (Pawelski, 2009)**

<b>Element</b>	<b>Orientation, Pre-Participation Student In-take Interview</b>	<b>Initial Participation Preliminary Period</b>	<b>Student Participation Matched w/ Mentor</b>	<b>Peer Mentor Participation Matched w/ Student</b>
<b>Activity / Activities</b>	-Interview -Workout Demo -Sign Parent / Student Contract	-Intense Physical Fitness -Preliminary Goal Setting -Meeting Mentor(s)	-Mentoring (w/ adult or peer) -Intense Physical Fitness at Weekly Workouts (w/ group) -Goal Setting, 3x per year (academic, fitness, social ) -Recognition by peers / adults	-Interview & Application -Training -Peer Mentoring (by student) -Intense Physical Fitness at Weekly Workouts (with group) -Goal Setting, 3x per year (academic, fitness, social ) -Recognizing their student
<b>Active Ingredient(s)</b>	-Questions, Discuss Expectations -Physical exercise -Commitment	-Commitment -Physical exercise -Physical Goal Setting	-Connection -Physical exercise -Commitment -Goal-Setting -Confidence -Resiliency -Competence -Character -Self-efficacy	-Connection -Physical exercise -Commitment -Goal-Setting -Confidence -Caring -Resiliency -Contribution -Competence -Character -Self-efficacy
<b>Target System(s)</b>	-Cognitive -Physiological -Behavioral	-Cognitive -Physiological -Social / Emotional -Behavioral	-Cognitive -Physiological -Social / Emotional -Behavioral -Attitudinal	-Cognitive -Physiological -Social / Emotional -Behavioral -Attitudinal
<b>Target Change</b>	Shift of involvement status from Awareness to Attraction Stage (see model on next page)	Shift of status from Attraction to Attachment	Shift of status from Attachment to Allegiance	Shift of status from Allegiance to Advocacy
<b>Desired Outcome</b>	-Engagement	-Engagement -Achievement	-Engagement -Relationships -Achievement	-Engagement -Relationships -Achievement -Transformational Leadership

**The Psychological Continuum Model (PCM; Funk & James, 2001; 2006)**

a stage-based developmental framework of recreational involvement

