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Impact Of The Future Project On Student Motivation: Meeting Basic Psychological Needs To Improve Academic Dispositions

Abstract

Student motivation in high school is a long-standing topic of interest considering the widespread problem of low academic engagement and relatively high dropout rates, which are predicted by low attendance. This prevailing problem is indicative that previous interventions have not been sufficient. One hypothesis is that interventions may be too targeted towards outcomes and neglect what motivation researchers in psychology have learned over decades. Motivation researchers, specifically self-determination theorists, have identified three underlying psychological needs (autonomy, competence, relatedness) that are critical to fostering intrinsic motivation. This study hypothesizes that these needs are not being met in the school setting even when academic interventions are present. This study will explore how a new intervention, The Future Project, that is not directly academic in nature but as a Positive Youth Development program may proactively foster these psychological needs and could be more effective in enhancing high school student academic motivation. The programming includes four facets: building one-on-one relationships between a student and mentor, exposing students to skill building courses, supporting students individually to design projects that they are passionate about and that have an impact on the world in some way, and it develops an intimate team of students who serve as collaborative leaders in their schools to support each other and their peers in self-reflection or personal project development. This is a mixed methods phenomenological study using secondary data analysis of student and alumni interviews, principal and teacher surveys, and teacher interviews. All data was collected by The Future Project in Spring 2016 to explore the student experience when participating in The Future Project programming and to gather feedback from students, teachers, and administrators. This study will use this data to explore how participating in The Future Project may contribute to fulfilling students' needs of autonomy, competence, and relatedness; and how that influences student academic motivation and engagement, which have previously been determined as precursors to academic achievement; and to illustrate the mechanisms that connect autonomy, competence, and relatedness with academic motivation and engagement.

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**IMPACT OF THE FUTURE PROJECT ON STUDENT MOTIVATION:
MEETING BASIC PSYCHOLOGICAL NEEDS TO IMPROVE ACADEMIC
DISPOSITIONS**

Jessica Koehler

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ABSTRACT

IMPACT OF THE FUTURE PROJECT ON STUDENT MOTIVATION: MEETING BASIC PSYCHOLOGICAL NEEDS TO IMPROVE ACADEMIC DISPOSITIONS

Jessica Koehler

Dr. Susan Yoon

Student motivation in high school is a long-standing topic of interest considering the widespread problem of low academic engagement and relatively high dropout rates, which are predicted by low attendance. This prevailing problem is indicative that previous interventions have not been sufficient. One hypothesis is that interventions may be too targeted towards outcomes and neglect what motivation researchers in psychology have learned over decades. Motivation researchers, specifically self-determination theorists, have identified three underlying psychological needs (autonomy, competence, relatedness) that are critical to fostering intrinsic motivation. This study hypothesizes that these needs are not being met in the school setting even when academic interventions are present. This study will explore how a new intervention, The Future Project, that is not directly academic in nature but as a Positive Youth Development program may proactively foster these psychological needs and could be more effective in enhancing high school student academic motivation. The programming includes four facets: building one-on-one relationships between a student and mentor, exposing students to skill building courses, supporting students individually to

design projects that they are passionate about and that have an impact on the world in some way, and it develops an intimate team of students who serve as collaborative leaders in their schools to support each other and their peers in self-reflection or personal project development. This is a mixed methods phenomenological study using secondary data analysis of student and alumni interviews, principal and teacher surveys, and teacher interviews. All data was collected by The Future Project in Spring 2016 to explore the student experience when participating in The Future Project programming and to gather feedback from students, teachers, and administrators. This study will use this data to explore how participating in The Future Project may contribute to fulfilling students' needs of autonomy, competence, and relatedness; and how that influences student academic motivation and engagement, which have previously been determined as precursors to academic achievement; and to illustrate the mechanisms that connect autonomy, competence, and relatedness with academic motivation and engagement.

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Chapter 1: Introduction

Motivation in high school students has been a topic of interest for decades (Ames, 1992). The statistics regarding motivation and engagement in youth are suboptimal. According to a 2013 Gallup Poll, only 33% high school students find school engaging (Gallup, 2016). Another nationwide study on high school students reports that 69% of respondents said they were not motivated or inspired to work hard (Civic Enterprises, 2006). And 1 in 6 youth in the U.S. ages 16-24 (6.7 million) are neither in school or working, which is an indication of lack of motivation (Civic Enterprises, 2012). This lack of student motivation has more critical implications such as lower school attendance, higher dropout rates, and an increased number of graduates who are ill equipped to succeed in college or the workforce (Archambault, 2009).

Low student motivation is not due to lack of school improvement or reform efforts; in fact, such efforts are ubiquitous. Perhaps academic interventions are focusing too narrowly on academics and not sufficiently on the emotional or psychological factors that support academic motivation. Evidence that the role of personal relationships in school influences student motivation continues to gain traction within education research and policy (Dusenbury & Weissberg, 2016; McMurrer et al., 2012; Roehlkepartain, et al., 2017), but student polls reflect that strong relationships between students and even one teacher or school staff member are rare. In a nationally representative sample of over two thousand 10th-12th grade students, only 14% reported “really connecting” with an adult in school (Geraci et al., 2017). Back in 2006, Civic Enterprises had reported similar though less discouraging findings from high school students across the nation: 56% said they could go to a staff person for school problems; only 41% had someone in school to talk

about personal problems; and 62% percent said their school needed to do more to help students with problems outside of class. These polling results regarding both low student engagement and weak student teacher relationships indicate that perhaps there is a connection between students' lack of engagement and lack of close personal relationships with in adult in their school. In order to be motivated, many students may have personal needs that schools could, but do not, fulfill.

Mentoring programs have been the most common interventions that attempt to build strong youth-adult relationships, and while there are numerous studies that suggest value in having a one-on-one relationship with an adult in the school, as many mentoring programs provide (Gregory & Ripski, 2008; Griffiths et al., 2012; Murray & Malmgren, 2005; Scales, Benson, & Roehlkepartain, 2011), they may be insufficient. According to a recent meta-analysis of mentoring programs, even those that do aim to support students emotionally and psychologically fall short in effecting important outcomes including student academic performance, attendance, attitude, behavior, or self-esteem (Wood & Mayo-Wilson, 2011). This could in part be because they do not address the larger social landscape of the school environment. As Murnane (2013) suggests, based on the sociological findings regarding the importance of relationships, particularly amongst peers, during adolescence, "traditional uses of resources that do not address the challenge of building a community will not make a difference" (p. 390). So one addition to mentoring interventions would be to also actively work with the school community to include peer-to-peer interaction to create an environment that supports academic motivation.

This is where a mentoring program designed around the principles of Positive

Youth Development (PYD) could prove more promising. PYD asserts that a number of factors must be considered to help students reach their full potential. These include community context, moral development, and acknowledging the unique interests of each student (Benson, 2003; Cummings, 2003; Damon, 1990; Damon, 1997; Dowling, Gestsdottir, Anderson, von Eye, & Lerner, 2003; Dowling et al., 2004; Flanagan & Sherrod, 1998; Gore, 2003; Lerner, 2004; Little, 1993; Pittman, Irby, & Ferber, 2001; Roth, Brooks-Gunn, Murray, & Foster, 1998; Scales et al., 2000; Wheeler, 2003; Youniss, McLellan, & Yates, 1999). Outside of these contextual and relational aims, examining the intrapersonal components of motivation and engagement could also provide insights into developing effective interventions as well.

Much of the relevant research on the intrapersonal nature of motivation is conducted in the field of psychology. Psychological interventions that go one step deeper than typical educational interventions and address underpinnings of student motivation have been shown to be powerful (Aronson, Fried, & Good, 2002; Blackwell, Trzesniewski, & Dweck, 2007; Cohen, et al., 2009; Good, Aronson, & Inzlicht, 2003; Harackiewicz, Rozek, Hulleman, & Hyde, 2012; Hulleman & Harackiewicz, 2009; Jamieson, Mendes, Blackstock, & Schmader, 2010; Sherman et al., 2013; Walton & Cohen, 2011; Wilson & Linville, 1982, 1985). The problem is many of these require intensive direct involvement of researchers, which compromises their sustainability and scalability (Paunesku, et al., 2015). Those that are less involved, such as Cohen et al.'s (2009) series of writing exercises, only showed minimal beneficial effects that did not endure. This is not surprising considering the lack of interpersonal interaction in this intervention. Within psychology, self-determination theory (SDT) of motivation may

provide the most applicable theory in terms of connecting what is known about the intrapersonal nature of motivation to education intervention strategies. SDT identifies three basic psychological needs that foster intrinsic motivation: autonomy, competence, and relatedness. SDT research for decades has shown that meeting these needs can positively influence student engagement (Taylor et al., 2014), and this research has been more highly correlated with student engagement than external factors such as support at home and neighborhood risk (Connell et al., 1995). Additionally, meeting these psychological needs fosters intrinsic motivation, which actually promotes creative and critical thinking and is linked with health and well-being (Deci & Ryan, 2008; Kasser & Ryan, 1993; Kasser & Ryan, 1996; Ryan, et al., 1996).

Despite the findings from PYD and SDT research, there are several problems remaining that this study intends to address. The research on SDT programs intended to promote student engagement is still emergent (Babic et al., 2014; Lonsdale et al., 2013), and the programs studied are highly targeted to specific contexts such as promoting student autonomy through math curricula (Eisenman, 2007). In the case of PYD, the interventions are largely divorced from the educational setting altogether (Curran et al., 2017); only a handful of studies measured indicators of student motivation or engagement for more broad and complex school-based interventions (Cho et al., 2005; Gopalan et al., 2013; Karcher, 2009). Additionally, only one PYD study followed students beyond high school graduation to assess long-term impact (Sulimani-Aiden, 2017), and the mechanisms for understanding exactly what program activities create impact also need exploration (Geldhof et al., 2014).

1.1 Research Context and Questions

This study will apply self-determination theory to examine if and how The Future Project, a school-based PYD program, supports students' sense of autonomy, competence, and relatedness and in turn, their academic motivation and engagement. The ultimate goal of The Future Project is to help students with their personal development to build purposeful, fulfilling, and healthy lives into adulthood. While it is not academic in nature, it does see academic engagement as an immediate indicator of such a life.

The Future Project program model is designed to help students identify and pursue their personal passions and goals outside of the academic classroom by working with a mentor who provides one-on-one coaching as well as facilitates building a peer community around student-led projects addressing their individual and collective passions and goals (Appendix A describes program operations in detail). This process of giving students the opportunity to design and lead their own projects could enhance students' sense of autonomy and competence. Positive and collaborative relationship building both with an adult and peers ought to enhance their sense of relatedness. Since The Future Project operates in the school setting, it is conducive to influencing students' experience of school. This could generate a stronger connection between students' autonomy, competence, and relatedness in The Future Project context as well as the school context, which could in turn improve student motivation and engagement. As an internal team member at The Future Project, my primary aim here as a researcher is to improve upon the student experience and to make recommendations to The Future Project and other PYD programs (my positionality as a researcher is discussed further in

Section 3.6.5. This context is the foundation for the following research questions:

RQ1a. How do students perceive participation in The Future Project as supporting the psychological needs (autonomy, competence, relatedness) that are precursors of autonomous motivation for actively participating students?

Autonomy, competence, and relatedness have been identified as precursors to autonomous (intrinsic) motivation and student engagement (Deci et al., 1999), and framing academics with intrinsic goals fosters deeper engagement with learning (Vansteenkiste, 2006). Therefore in order to determine whether and how The Future Project may have an influence on student academic motivation it is first necessary to explore how The Future Project meets the underlying precursors to motivation.

RQ1b. How does participation in The Future Project continue to have an impact upon the self-perceived basic psychological needs (autonomy, competence, relatedness) that are precursors of autonomous motivation for program alumni?

One goal of The Future Project is to help set students on a trajectory that ultimately supports their well-being even after high school graduation. Since fostering intrinsic motivation through autonomy, competence, and relatedness has been shown to have positive longitudinal effects on a variety of behaviors and sense of well-being (Deci et al., 1999), this study explores how The Future Project alumni still recall or experience changes in their autonomy, competence, and relatedness due to their participation in The Future Project.

RQ2a. How does participation in The Future Project influence academic motivation and engagement?

As described above for research question 1a, prior research has shown that self-perceived fulfillment of autonomy, competence, and relatedness are underlying precursors to academic motivation and engagement. In answering this second research question, this study will explore what evidence there is of change in student academic motivation and engagement, as well as learning social emotional skills that can be attributed to The Future Project from the perspective of administrators, teachers, and students.

RQ2b. What is the nature of the relationship between autonomous motivation, or general intrinsic motivation, attributed to participation in The Future Project and student self-reported academic motivation and engagement?

In order to further elucidate the mechanism by which participation in The Future Project may ultimately influence academic motivation and engagement, this study will seek to identify explicit connections between increased autonomy, competence, or relatedness attributed to The Future Project and changes in academic motivation and engagement. Here applying a phenomenological approach becomes particularly salient to providing the nuanced details needed to better understand the mechanisms connecting program inputs to the outcomes of interest (Fulmer & Frijters, 2009).

Chapter 2: Literature Review

2.1 Chapter Overview

This chapter is a review of the literature regarding positive youth development interventions and the psychological motivational research of self-determination theory in the context of high school academics and extracurricular activities. The former provides insight into the practices that achieve positive outcomes with youth, while the latter is useful for elucidating the intrapersonal psychological perceptions that may explain why a positive youth development intervention does achieve such outcomes. Combined, these allow for a rich exploration into a mechanism of attaining positive outcomes from youth interventions, which is the aim of this study.

- Section 2.2 provides an overview of positive youth development and the current understanding of best practices in positive youth development interventions.
- Section 2.3 presents a comprehensive overview of self-determination theory of motivation and where that research intersects with academic motivation and engagement. This includes a theoretical discussion and the operationalized definitions of the different forms of motivation and the three underlying psychological needs that are precursors to autonomous motivation according to self-determination theory. Lastly, this section concludes with the current state of applying self-determination theory to academic motivation and engagement.
- Section 2.4 synthesizes the theories of positive youth development and self-determination theory to provide the conceptual framework for this study, which aims to explore whether and how the positive youth development intervention,

The Future Project, has an impact on student academic motivation and engagement.

2.2 Positive Youth Development

The Future Project is considered a positive youth development intervention in that its primary goal is to support youth in reaching their full potential as whole people; it is not intended as remediation, and it is not a targeted academic intervention. The purpose of this study is to understand if and how The Future Project has an impact on student academic motivation, engagement in a manner that does not compromise the students' overall and long-term well-being for the sake of improved academic outcomes.

Understanding the landscape of existing PYD interventions and related research is a necessary component of this study since this is an evaluation of The Future Project as an emergent PYD program.

2.2.1 Background and theory of positive youth development. Positive youth development (PYD) refers to both the study of how to capture the full potential of children and adolescents to promote thriving during youth and in transition to adulthood, and the programmatic attempt to promote the characteristics of PYD. PYD assumes that all children have unique abilities, interests, and future potential (Damon, 2004). In addition to supporting youth strengths, PYD addresses moral development, civic engagement, thriving, and well-being (Benson, 2003; Cummings, 2003; Damon, 1990; Damon, 1997; Dowling et al., 2003; Dowling et al., 2004; Flanagan & Sherrod, 1998; Gore, 2003; Lerner, 2004; Little, 1993; Pittman, Irby, & Ferber, 2001; Roth et al., 1998; Scales et al., 2000; Wheeler, 2003; Youniss, McLellan, & Yates, 1999).

Positive youth development interventions are the result of many decades of evolving youth-centered programs. Originally, interventions intended to support children were simply responses to crises such as drug use, juvenile crime, and teen pregnancy. Some preventative measures began in the 1970s, though these were still simply targeted to preventing specific problem behaviors (Catalano et al., 2004).

In the 1980s, such targeted approaches faced criticism and sparked a more broad approach that promoted positive social and emotional skill building (Garmezy, 1983; Hawkins, Catalano, & Miller, 1992; Kellam & Rebok, 1992; Newcomb, Maddahian, & Bentler, 1986). Policymakers and health and education practitioners now agree that in order for youth to reach appropriate developmental milestones that ultimately prepare them for a healthy successful adulthood and to contribute to civil society there cannot simply be a focus on mediating problem behaviors; an emphasis on positive youth development is also needed (Catalano et al., 2004; National Research Council Institute of Medicine, Chalk & Phillips, 1996; National Research Council Institute of Medicine, 2002; Pittman & Fleming, 1991; Pittman, 1991; Weissberg & Greenberg, 1997). Measurement of positive youth development finds a clear correlation between positive youth development, greater life satisfaction, and decreased problem behavior (Sun & Shek, 2012), but the effects of PYD interventions thus far are not long lasting. In longitudinal studies only one in six adolescents show increases in positive youth developmental traits and decrease in problematic or risky behavior, indicating the strong need for PYD support (Lerner et al., 2012).

Since PYD spans fields ranging from psychology, health, policy, education, and beyond (Lerner et al., 2005b), many have contributed to its development. The theoretical

foundation of PYD is built upon the work of many researchers. Considered among the most influential are Martin Seligman, Corey Keyes, and William Damon (Lerner et al., 2009). Martin Seligman's contributions to the field of positive psychology that have informed PYD include a focus on happiness, well-being, development of character strengths, and how institutions can support positive traits and experiences (Seligman & Csikszentmihalyi, 2000; Seligman, 2002; Seligman, 2003a, 2003b). Corey Keyes' groundbreaking work shifted the definition of mental health from simply the absence of mental illness to the notion of flourishing (Keyes, 2005, 2006, 2007). Lastly, William Damon's work on youth purpose posits that personal thriving is contingent upon meaningful engagement within community (Damon, 2003, 2004, 2008; Mariano & Damon, 2008). These broad theoretical contributions are key to the foundation of PYD frameworks.

Due to the wide reach of PYD, there are multiple PYD models and frameworks. For the sake of clarity and brevity, only two of the most prominent are mentioned here. First is commonly cited Developmental Assets framework (Benson, 1997), which lists 40 criteria needed for thriving in 12-18 year olds. Second is Lerner and Lerner's more succinct 5C Model of PYD, outlined below (adapted from Geldhof et al., 2014; Lerner et al., 2005a; Roth & Brooks-Gunn, 2003a) which appears to be more widely used among PYD programs and as a basis for empirical research. Both frameworks encapsulate similar themes.

Competence: 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.

Vocational competence involves work habits and career choice explorations, including entrepreneurship.

Confidence: An internal sense of overall positive self-worth and self-efficacy; one's global self-regard, as opposed to domain specific beliefs.

Connection: 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.

Character: Respect for societal and cultural rules, possession of standards for correct behaviors, a sense of right and wrong (morality), and integrity.

Caring: A sense of sympathy and empathy for others. (p. 934)

It is interesting to note how this 5C framework overlaps with the psychological needs identified by self-determination theory. PYD's competence and confidence closely align with SDT's competence. PYD's connection and caring closely align with SDT's relatedness. Where they differ is PYD's inclusion of character and exclusion of autonomy, or perception of having choice and power in decision-making. This is evidence that PYD programs that follow the 5C framework do substantially differ from SDT interventions in this regard. The primary differentiation is the overall value system connected to PYD that assumes young people have great potential that ought to be, but is not often, fully supported. This consistency allows for more coherence in the theoretical framework underlying this study.

2.2.2 Outcomes and promising practices of positive youth development

interventions. Observational studies of PYD interventions have found that participating in out-of-school programs, building relationships with adults, hope, and self-regulation are particularly strong contributors to positive youth development (Larson & Tran, 2014). Youth participants in physical-activity programs felt a greater sense of belonging and social responsibility, two characteristics of PYD, if their activity leader showed emotional support and promoted the youth's sense of autonomy (McDonough et al., 2013). Outcomes associated with the presence of fostering PYD traits included greater life satisfaction according to one Chinese study (Sun & Shek, 2012). A mentoring study in Israel found that at-risk students' lives were transformed, with positive effects lasting into adulthood, only when the mentoring relationship was built on deep caring and love such that the youth felt loved as the child of the mentor (Sulimani-Aiden, 2017). This study is particularly salient in its design because though PYD is aimed at helping youth to thrive such that the effects last into adulthood, no other research reviewed for this study tracked youth more than two years beyond the PYD intervention. Other mentoring programs in the US have been shown to improve community-school engagement, as well as local community perspectives regarding youth purpose and pro-social values (Schwartz et al., 2013). There is no evidence, however, that they have a significant impact on student academic performance, attendance, attitude, behavior, or self-esteem (Wood & Mayo-Wilson, 2011). For afterschool PYD interventions aimed specifically at supporting racial and ethnic minority youth in the US, participants showed improvement in academic outcomes such as classroom behavior, grades, and test scores; and non-academic improvement including psychological and social adjustment, reduced

aggression, and drug use (Durlak & Weissberg, 2007; Fredricks & Simpkins, 2012; Morrison et al., 2000). However, these results have also been found from studies of the effects of simply participating in any organized extracurricular activity, not necessarily ones designed for PYD (Marsh, 1992; Marsh & Kleitman, 2002). Some researchers have begun exploring how young people themselves can be “creative producers of their own development” (Larson & Tran, 2014, p. 1012), a stance that seems particularly applicable to programs that center around youth voice and empowerment, but this approach is still nascent.

Overall, trends from decades of studies of after-school activities that include PYD aspects such as sustained adult-youth relations, skill building activities based on positive goals, and opportunities for youth leadership showed increased development of character traits such as integrity, commitment, motivation to do the right thing; and lower depressive symptoms and risky behavior (Lerner, 2017).

The following is a comprehensive list of promising practices that correlate with positive outcomes according to a general review of PYD interventions (Catalano et al., 2004; Lerner, 2017):

- Provide opportunities to engage with the community
- Provide opportunities for youth recognition
- Build social and emotional skills
- Students participate for 9 months or longer in mentoring relationship
- Provide opportunities for peer bonding
- Provide opportunities for peer collaboration

- Students proactively working with teachers and administrators on student-led school improvement plans
- Student-led, mentor facilitated

2.2.3 Overview of school based positive youth development interventions and impact. The results and practices listed in the previous section provide examples and general trends of PYD programs that primarily occur outside of the school context. This section highlights the research specifically on school-based interventions, which is much more limited. Due to the lack of rigorous research in this sub-specialty, there is little foundation to build upon, but what is known is worth presenting here in detail.

The literature review by Curran et al. (2017), while being the most comprehensive in providing descriptions of relevant PYD program design and impact, indicates the dearth of peer-reviewed rigorous research articles on school-based PYD programs. They used various combinations of the following search terms: positive youth development, youth, young adults, adolescents, teenagers, leaders, leadership, leadership development, school, school-based, peer mentorship, peers mentoring peers, youth mentorship. This preliminary search yielded 711 articles, but after excluding articles published before 2000, those directly addressing school curriculum, and those not providing quantitative or qualitative data on program impact, only 23 remained. From these 23, 6 of the interventions targeted at-risk students who had low GPAs or high truancy, and the curricula were designed to mitigate problem behaviors such as drug and alcohol use, violence, and bullying. By definition this does not qualify as positive youth development (Catalano et al., 2004; Damon, 2004), further indicating the lack of research done on PYD in schools, and possibly indicates a sheer lack of true PYD interventions even in

operation in schools at all. Lastly, of the remaining 17 articles, most of these programs had positive, though not always statistically significant, effects on student behavior, goal-setting, confidence, self-efficacy, communication (Curran et al., 2017), so the research on true PYD interventions that have significant impact is rare.

Though rigorous research on PYD school-based intervention impact is so limited, it is still helpful to know what the intervention designs include. The following paragraphs in this section illustrate the programs featured in the 23 articles reviewed by Curran et al. (2017). Some programs were classroom lesson interventions that included lectures on social and emotional skills coupled with small group activities. Variations among the programs include a focus on athletic activities, history of local native culture, student-led community service projects, and health awareness. Two addressed building skills for seeking employment (e.g. professional dress, interviewing strategies, role-play interviews). There were also student leadership programs. Each varied in the tasks performed by the students, but all required students to increase their social responsibility and act as agents of change in their school or community. The only consistent impact reported from the leadership style programs was increased self-efficacy. Several also reported development of leadership skills, critical thinking, and problem solving. Lastly, two mentorship programs were peer based, where older students were paired with elementary and middle school students. Participating mentors reported stronger school connectedness, accelerated maturation, and improved interpersonal skills.

Out of the 23 programs reviewed, only three studies reported effects on school motivation, engagement, and achievement. Table 1 (below) was generated for this current study to summarize the results reported by Curran et al. (2017) from these three

interventions. One classroom lesson program, *Reconnecting Youth*, which grouped high risk students together and provided teachers with a curriculum around social emotional skill development and interpersonal conflict actually showed decreases in school connectedness and GPA for participating students compared with controls (Cho et al. 2005). The authors theorized that grouping students who were already truant and high-risk reinforced that negativity. Another program, *Project Step-Up*, that facilitated a combined discussion around social-emotional skills and academic issues, saw a rise in student attendance (Gopalan et al. 2013). Third, a study of cross-age peer mentoring programs (CAMPs) showed student mentor participants' increase in feelings of school connectedness (Karcher, 2009).

Table 1
Academic Impact of School Based PYD Interventions

Type of Intervention Strategy	Description	Academic Motivation or Engagement Impact
Classroom Lesson (Cho et al. 2005)	Grouped high risk students and provided teachers with a curriculum around social emotional skill development and interpersonal conflict	Decreased GPA, decreased sense of school connectedness
Classroom Lesson (Gopalan et al., 2013)	Combined discussion around social-emotional skills and academic issues	Improved student attendance
Peer Mentorship (Karcher, 2009)	Students were trained as mentors and selected younger students as mentees	Increased sense of school-connectedness

2.2.4 Positive youth development research gaps and future implications.

Taking a step back from specifically school-based interventions and impact on academic motivation and engagement, the preceding sections have revealed that PYD studies in general generated positive outcomes, but they are not necessarily significant or lasting.

While a list of promising practices that correlate with positive outcomes has emerged from the literature (Catalano et al., 2004; Lerner, 2017), more research into the mechanism of change including the predicting and moderating factors involved is warranted (Geldhof et al., 2014). Since there is not one single mechanism yet identified, customizable approaches to PYD could be worth exploring. Some work on this has begun, for example, recent insight into student time use patterns can help developing interventions better target individual student needs; if a student already spends significant time studying or in academic activities, then they may need more honed study skill building or self-esteem counseling, but not an intervention that promotes greater time spent on academics (Wolf et al., 2015). As shown in the previous section, there is little research into how school based PYD interventions impact academic motivation and engagement, which is of particular interest to this current study. Lastly, though the theoretical intention behind positive youth development is to support youth thriving as an investment in their long-term well-being, only one article reviewed in this chapter tracked youth into adulthood (Sulimani-Aiden, 2017). This is an indication of the dearth of research on the lasting impact of PYD interventions.

2.3 Self-Determination Theory (SDT)

In an attempt to further elucidate how successful positive youth development interventions may support youth motivation and ultimately long-term well-being, this study explores the self-determination theory (SDT) of motivation. SDT differentiates types of motivation and identifies those that are sustainable and correlate with long-term well-being. Additionally, it probes into the underlying psychological needs that foster

such motivation, and has begun to investigate what conditions are conducive to fulfilling those underlying needs.

2.3.1 Theoretical underpinnings of self-determination theory. Self-determination theory (SDT) is a theory of motivation that asserts that people are constantly integrating internal and external information and stimuli towards a coherent sense of self (Ryan & Deci, 2004). Thus, SDT purports that there is an ongoing dialectical relationship between an individual's internal intrinsic motivation and external social forces (Deci & Ryan, 1990) such that motivation cannot be simplified into the binary forms of extrinsic and intrinsic. Intrinsic motivation is typically thought of as participation in that which is inherently enjoyable, interesting, or satisfying. Extrinsic motivation, on the contrary, is typically defined as doing something for some external reason. Over the last three decades, SDT has created a more nuanced motivational construct, autonomous motivation, that combines intrinsic motivation and fully internalized extrinsic motivation. (Ryan & Deci, 2000). Full internalization of extrinsic motivation has two components: it must be incorporated into one's sense of self, and there must be integrated regulation. An example of extrinsic motivation that has become part of one's sense of self would be a student who is motivated to study because they know the knowledge gained will help them be a better doctor, which is their intrinsically chosen career path. Typical extrinsic motivation that has not been fully integrated would be a student studying because their parents will either reward them for doing so, or the student is motivated out of pride. Integrated regulation means not only identifying that something is important to one's sense of self, but taking the necessary actions to integrate it into one's life (Gagne & Deci, 2005). In sum, autonomous motivation is comprised of

two parts: intrinsic motivation and internalized integrated regulation of extrinsic motivation.

This distinction between autonomous motivation versus extrinsic is significant because studies have shown that, unlike extrinsic motivation, autonomous motivation has wide reaching implications. There are long term effects associated with intrinsic motivation, as opposed to extrinsic. Studies have determined that pursuing and attaining intrinsic goals, such as those pertaining to personal growth or community development, support SDT needs and are associated with greater well-being, health, and performance (Deci & Ryan, 2008); extrinsic goals, such as pursuit of fame or money, have the opposite effects (Kasser & Ryan, 1993; Kasser & Ryan, 1996; Ryan, et al., 1996). Mindfulness techniques that include paying attention to and reflecting on one's inner and outer experiences can also promote autonomous motivation, and warrant further investigation (Deci & Ryan, 2008).

2.3.2 Underlying psychological needs as motivational factors. Self-determination theory of motivation is distinct not only in its nuanced definition of autonomous motivation, which combines intrinsic motivation with integrated extrinsic motivation, but it also seeks to understand what drives autonomous motivation specifically because, as concluded in an SDT meta-analysis (Deci et al., 1999), general research on extrinsic reward and punishment systems (i.e. behaviorist carrot-stick reinforcement) reveal that such extrinsic motivating systems actually undermine autonomous motivation, and in turn, the lifelong positive outcomes associated with autonomous motivation. Deci & Ryan (2000) explain:

We found that without the concept of needs we were unable to provide a psychologically meaningful interpretation and integration of a diverse set

of research results in the areas of *intrinsic motivation*, which we consider to be a basic, lifelong psychological growth function (Deci & Ryan, 1980), and *internalization*, which we consider to be an essential aspect of psychological integrity and social cohesion. (p. 232)

As a result of this decades long quest, self-determination theory now can provide significant insight into what factors support or dissuade autonomous motivation. SDT theorists concluded that the extent to which autonomous motivation can develop is dependent upon meeting three basic psychological needs: competence, autonomy, and relatedness. Competence is the self-perception that one is capable and able to exercise those capabilities in an interactive ongoing and effective manner with their environment and in relationships. Autonomy is defined as a sense of volition or being responsible for one's own behavior, and ought not to be confused with individualism, independence, or selfishness. Relatedness is simply feeling connected to others (Ryan & Deci, 1991). Competence, autonomy, and relatedness are necessary for maintaining intrinsic motivation (Gagne & Deci, 2005), and relatedness has been found to be a key factor in the process of fully internalizing and integrating an otherwise extrinsic motivator. This is due to the values of one person becoming more internalized by another if in close relationship (Ryan & Deci, 2000).

SDT researchers believe the rationale behind why extrinsic rewards and punishments are, at best, ineffective can be explained in relation to autonomy, competence, and relatedness. These external incentives, be they monetary rewards, deadlines, and so forth, actually shift the perceived locus of causality from internal to external, which undermines one's sense of autonomy. Recent SDT interventions have found that as long as there is a perceived internal locus of causality and autonomy support then intrinsic motivation will thrive. Intrinsic motivation is also heightened when

one receives positive feedback, thus reinforcing competence (Reeve, 2012). This is only true, however, if the person feels responsible for the work being evaluated, so autonomy must also be present. In adolescence specifically, feeling autonomy, or self-endorsement, regarding decision-making was related to positive adjustment and psychosocial functioning, as opposed to feeling that decisions were externally controlled. These results held true regardless of whether the decision was independent, meaning the adolescent did not rely on others to come to the decision, or dependent, seeking help from others (Van Petegem et al, 2011). Finally, in regards to relatedness and intrinsic motivation, youth who are engaged in an intrinsically motivated activity in the presence of an adult will lose motivation if the adult does not respond to the child's attempt to interact. Having a sense of secure relatedness in general beyond the context of a specific activity highly correlates to children's level of intrinsic motivation (Deci & Ryan, 2000).

In terms of the distinction between the compromised long-term effects of extrinsic motivation and the positive long-term effects of intrinsic motivation, multiple studies have shown that fulfillment of the basic needs of autonomy, competence, and relatedness independently predict overall well-being and healthy decision making (Deci et al., 2001; Sheldon & Niemiec, 2006). Greater autonomy specifically correlates with an increase in all of the following: intrinsic motivation, creativity, cognitive flexibility, self-esteem, positive emotions, and conceptual learning (Deci & Ryan, 1987). A cross-cultural study of self-perceived satisfaction of basic psychological needs in eight countries (Philippines, Malaysia, China, Japan, The United States, Australia, Mexico, and Venezuela) revealed a universal connection between the need for autonomy, competence, and relatedness and self-fulfillment and well-being (Church et al., 2012). When comparing people with the

same self-efficacy, those who exhibited internalized motivation versus those externally motivated show more excitement, vitality, persistence, creativity, and enhanced performance on tasks in general and greater self-esteem (Deci & Ryan, 1991; Deci & Ryan, 1995; Nix, et al., 1999; Ryan, Deci, & Grolnick, 1995; Sheldon, et al., 1997).

There are contextual factors that influence autonomy, competence, and relatedness. Deci and Ryan (1985) explored how three types of conditions or events, informational, controlling, and amotivating, affect the participant's perception of autonomy, competence, and in turn, intrinsic motivation as indicated by willingness to proceed with a given task with minimal external support. Informational events are open-ended allowing for the participants to perceive an internal locus of causality and an opportunity to exercise their competence. Controlling events were designed with pressure towards a particular outcome (e.g., a test score). Amotivating events are those that provoke a sense of incompetence and helplessness in participants. They found that there was not a distinct correlation between the type of event and the extent to which motivation flourished. Since autonomy, competence, and relatedness are self-perceived, different people may experience the same situation very differently. Therefore, this study also examined intrapersonal characteristics as the independent variables and indeed determined that informational environments are not the most conducive for intrinsic motivation in all people. Some people need the extant controls of the controlling environment in order to orient, focus, gain traction, and organize their motivational behavior. In general, there was a wide range of events that participants found to be amotivating. From this, Deci and Ryan concluded that, individual preferences for behavioral initiation and regulation need to be accounted for when determining the ideal

environment to promote autonomy, competence, relatedness, and intrinsically motivated behaviors.

2.3.3 Motivation and engagement as predictors of student achievement.

Studies of developmental motivation that account for the motivational trajectory at different ages show that student intrinsic motivation declines from kindergarten through high school (Skinner et al., 2009), with marked drops during transitions to both middle and high school (Wigfield et al., 2006). This is important to note because according to numerous other studies, student motivation is predictive of engagement, attendance, class participation, homework completion, higher GPAs, and test scores (Bridgeland, Bruce, & Hariharan, 2013; Green et al., 2012; Koaraju & Karau, 2009). Exploring motivation as defined by self-determination theory in particular could provide further insight into the link between motivation, engagement, and academic achievement.

2.3.3.1 Student motivation, engagement, and school outcomes. Research has defined motivation as the underlying drive behind a behavior, while engagement is an example of one such behavior wherein the student is actively participating in a learning opportunity, and active participation should result in improved achievement (Reeve, 2012). A meta-analysis by Deci et al. (1999) looking at experiments that explored the relationship between extrinsic rewards on intrinsic motivation found patterns in student engagement. Intrinsic motivation to master something has been linked to improved academic achievement and extrinsic motivation, such as grades or recognition, associated with decreased achievement (Proctor et al., 2014). A similar study confirmed these results though found this correlation to be dependent upon the sociocultural context (Liem et al., 2012). Other studies showed positive feedback enhanced student interest and

external tangible rewards actually inhibited self-reported intrinsic motivation and free-behavioral choices. This is considered to be reflective of whether or not the reward system supported or undermined autonomous motivation. For example, the student likely perceived the external tangible reward as a controller of their behavior that undermined their sense of competence, whereas positive verbal feedback validated their competence (Deci, Koestner, & Ryan, 1999). Another meta-analysis coupled with longitudinal studies on the relationship between autonomous motivation and academic achievement concluded that both sub-components of autonomous motivation, intrinsic motivation and integrated regulation of extrinsic goals positively influenced academic achievement, and the correlation was strongest and most consistent for intrinsic motivation. Additionally, the authors determined that externally controlled regulation, such as pressure to do well on a test, actually compromised academic achievement (Taylor et al., 2014).

Eisenman (2007) reported that three promising practices for incorporating SDT into the classroom include: allowing students to (1) attempt tasks and experience success from their efforts, (2) practice decision making in order to learn self-regulatory skills, such as setting small goals and time management, and (3) align classroom work with personal goals. These can serve as a guide for development and assessment of emerging intervention strategies.

2.3.3.2 *Autonomy, competence, and relatedness and school outcomes.* Many of the studies connecting student engagement and motivation specifically highlighted the importance of meeting the three basic psychological needs and emphasized teacher-student relatedness in particular. In fifth-graders, reading behavior and performance has been linked to recreational autonomous reading motivation, that is students choosing to

read in their free time (De Naeghel et al., 2012). Other studies found students who felt more connected to their parents or teachers had internalized positive behaviors regarding school and more intrinsic motivation if teachers were perceived as warm and caring (Ryan, Stiller, & Lynch, 1994; Skinner et al., 2012). Another study linked relatedness behaviors such as openness and conscientiousness to improved academic achievement and higher GPAs (Komarraju & Karau, 2009). Reeve (2012) reported that student engagement and well-being are enhanced when students can express themselves freely, pursue their own interests, and when teacher-student interactions synthesize student driven and teacher driven motivating factors. The classroom can support autonomous motivation by giving students opportunities to make choices, take responsibility for, and engage in discussion about their own learning. This results not only in increased motivation, but also deeper understanding and improved academic performance (Onyon, 2012). At the college level, higher autonomy, competence, and relatedness correlated with higher GPAs and greater academic persistence (Guiffrida et al., 2013).

Self-determination theory research has also found that students who are supported in meeting their needs for autonomy and competence in non-academic activities, such as an after-school job, showed greater motivation towards school, had higher achievement, and decreased dropout rates (Taylor et al., 2012). A study of African-American youth in three urban US cities showed that youth having perceived skills, ability to control outcomes, positive feeling towards self and closeness to peers in school correlated with better attendance and academic performance. Their model – based on a combination of three theoretical domains (motivational and self-systems, identity and cultural ecology, and developmental risk) – asserted that “interpersonal contexts shape individuals’ beliefs

about themselves within particular cultural endeavors, such as school, and these beliefs result in patterns of action reflecting engagement or disaffection within these endeavors” (Connell, Spencer, & Aber, 1994, p.494). From this, the authors suggested that interventions aimed at academic outcomes should use more interpersonal, psychological, and behavioral, not necessarily academic points of entry to improve academic engagement and performance in low SES minority youth.

2.3.3.3 Competence and relatedness stronger motivational factors than demographics. Interestingly, research has even shown that academic motivation is more dependent upon internal perception of competence and relatedness than personal status factors like SES or ethnicity (Connell et al., 1995; Skinner, 2009). This has profound implications for the possibilities of interventions within education considering these internal perceptions are dynamic and malleable, unlike the impossibility of changing someone’s socioeconomic background or ethnicity.

Skinner et al. (2009) compiled an array of established factors that influence student motivation according to motivational developmental research. The internal individual factors consist of self-efficacy, expectancies of success, perceived control, perceived competence, learned helplessness, values, goals, goal orientation, self-regulatory style, interest, commitment, identification, sense of relatedness, attachment, and feelings of belonging. Social contextual factors include rewards, goal structures, nature of academic tasks, autonomy in decision-making, involvement of authority figures, peers, school climate, neighborhood climate, and more.

Connell et al. (1995) studied the relative impact on numerous variables on school engagement. In this study, autonomy, competence, and relatedness were operationalized

in the school context as: autonomy – reasons why students do school work; competence-strategies and capacities students perceive for achieving success and avoiding failure, relatedness – emotional quality of experience with classmates and teachers. Family economic risk was defined by eligibility for free or reduced price lunch. Neighborhood risk was assessed by a composite of percentage of low SES residents, percentage of jobless males, and inverse of percentage of high SES neighbors. Both home and school support are defined by student perception of structure, autonomy support, and involvement. The results comparing each of these variables with student engagement revealed that for both female and male students perception of competence and relatedness each were highly correlated with student engagement, and were roughly four times more strongly correlated than family economic risk and support at home for males, and twice as strongly correlated for females. The only other factor listed that was nearly equally correlated with engagement was support at school. Autonomy was only roughly half as correlated as competence and relatedness, but still a stronger indicator than family neighborhood risk for both males and females, and twice as strong as support at home for males. Neighborhood risk showed no correlation with student engagement for either.

2.3.3.4 Summary of SDT strategies for academic motivation and engagement.

Looking across multiple self-determination theory based interventions, school engagement and completion are best supported by the following (Eisenman, 2007):

- Teaching the skills associated with self-determined behavior through academic curriculum.
- Assisting students to apply self-determination skills to self-identified and personally meaningful short- and long-term goals.

- Providing autonomy, competence, and relatedness-supportive school environments and adult guidance, especially during critical transition periods.

2.3.4 Operationalizing psychological needs, motivation, and engagement.

Since the goal of this study is to measure changes in students' sense of autonomy, competence, and relatedness to ultimately connect them with student academic motivation and engagement, it is necessary to operationalize these theoretical constructs. This section provides clear examples of each.

2.3.4.1 *Self-perceived autonomy.* Autonomy is defined as a sense of volition or being responsible for one's own behavior, and ought not to be confused with individualism, independence, or selfishness. Key characteristics of autonomy to look for (Deci & Ryan, 1985):

1. Feels the psychological freedom to speak up or act upon an idea
2. Perceives internal locus of causality
3. Feels they have choices
4. Understanding and having control over own emotions
5. Feels able to be one's self
6. Able to pursue own interests
7. Able to make own decisions

2.3.4.2 *Self-perceived competence.* Competence is defined as encompassing a person's strivings to develop at least one skill that they can apply in an interactive ongoing and effective manner with their environment and in relationships.

Instrumentalities that originate with the person include tangible skills like being a good dancer or intangible skills such as having problem solving insights or the confidence to reach out to people. Autonomy and competence are distinguishable in the sense that autonomy is more about feeling in control and able to make choices, whereas competence

is more about actually believing you have the skill and ability to actually accomplish what you set out to do, and that it is valued by others Key characteristics of competence to look for (Deci & Ryan, 1985):

1. Takes credit for own accomplishments
2. Feels acknowledged, needed, or appreciated for accomplishments
3. Feels that own skills/accomplishments are useful to others

2.3.4.3 Self-perceived relatedness. Relatedness is defined as encompassing a person's strivings to relate to and care for others, to feel that those others are relating authentically to one's self, and to feel a satisfying and coherent involvement with the social world more generally. The following are examples of relatedness (Ryan & Deci, 2000):

1. Student perceives care from an adult
2. Student perceives another paying attention to them while the student works on a task
3. General report of feeling connected or belonging to another person or group
4. Student feels understood teacher, peers, or mentor, etc.
5. Student feels they can tell their teacher, peers, or mentor, etc. anything

2.3.4.4 SDT applied to academic motivation. The level of academic persistence and motivation are operationalized by combining the SDT spectrum from (1) lack of motivation, to (2) extrinsic motivation, to (3) integrated extrinsic, to (4) intrinsic, where (3) and (4) are levels of motivation that self-determination theory research has linked not only with sustainability but also positive long-term repercussions such as healthy behaviors and overall well-being (Ryan & Deci, 2000). The descriptions for each of these levels are based on the academic motivation and persistence scale in Midgley et al. (2000) (See APPENDIX K).

(1) Student lack of motivation can be identified by either direct proclamation of dislike and avoidance of school, schoolwork, and learning. It also shows up commonly as an ambiguous and apathetic attitude. These are the three main characteristics to look for when coding for level 1, lack of motivation.

(2) Extrinsically motivated students are compelled to do their work and to learn not because of any inherent value or enjoyment they see in it, but in order to indirectly fulfill an external goal or to avoid a negative consequence. Coding for level 2, extrinsic motivation, can be broken down into five main motivating characteristics to look for when coding for extrinsic motivation: recognition, grade, competition, compliance, reward

(3) Intrinsic motivation is slightly more complex than simply looking for inherent enjoyment and voluntary involvement with school work or learning, and also includes tasks that are not deemed enjoyable necessarily, but are considered to be inherently valuable to the student. This latter characteristic is known as integrated extrinsic motivation. So for coding level 3, look for the follow four characteristics: curiosity, involvement, enjoyment, and valuing/importance.

2.3.5 Research gaps and future implications. The literature review presented here reveals the decades long development of the theory of self-determination, but much remains to be explored regarding its application. Three primary gaps exist: (1) understanding the mechanism for how to foster autonomy, competence, and relatedness, (2) research tracking the long-term outcomes of SDT interventions in education, and (3) robust measurement methods of the intersection of SDT and educational motivation and engagement.

An important next step in SDT applied research would be to determine causality and to better understand any mechanisms for how to elicit an increase in self-perceived autonomy, competence and relatedness; additionally the causal mechanism that links autonomous motivation to changes in attendance, academic engagement, and motivation is also needed. Applying self-determination theory to student engagement interventions is a relatively new topic (Babic et al., 2014; Lonsdale et al., 2013), so there is a gap in the literature around these topics.

A second shortcoming in the literature is that currently the majority of studies applying SDT to school outcomes are cross-sectional, and do not track students for more than the duration of the intervention – typically less than one year (Taylor et al., 2012; Van Petegem et al., 2011). In general, the long-term effects of self-determination interventions specifically, however, have also not been sufficiently explored (Eisenman, 2007).

Third, while SDT is not a new theory, there is not yet a strong foundation of how to validly and reliably measure SDT regarding their effects on academic motivation (Eisenman, 2007; Reeve, 2012). Much of the data collected in previous studies only includes student self-reporting, so future research should incorporate other data sources as well, such as surveying teachers and peers to triangulate self-reporting measures (Taylor et al., 2012; Taylor et al., 2014; Van Petegem et al., 2011); this is particularly important since perceptions of needs fulfillment can vary across cultures and sub-cultures (Church et al., 2012).

2.3.6 Summary. The key points from positive youth development and self-determination theories, their commonalities, and their relevance to The Future Project

programming, are summarized here.

Autonomous motivation, as defined by self-determination theory, is comprised of intrinsic motivation and integrated regulation of extrinsic motivators, and these are dependent upon three basic psychological needs: competence, autonomy, and relatedness. Integrated regulation of extrinsic motivators is dependent upon relatedness. Integrated regulation of extrinsic motivation, and even more so intrinsic motivation, were associated with academic motivation, implying that meeting all three basic psychological needs is key to increasing academic motivation and related outcomes. Non-academic work outside of school can actually enhance high school motivation and achievement and decrease dropout rates if the work increases the student's general sense of autonomy and competence, and the work supervisor is actively supportive of the student's autonomy. The Future Project is unique among previous self-determination interventions targeting adolescents in several respects: (1) previous interventions had very focused goals and contexts. For example, only applied to weight-loss programs or sports teams whereas with The Future Project students choose the context in which they want to apply the support they receive; (2) previous interventions studied typically only emphasize one of the three underlying psychological needs; The Future Project actively addresses all of them; (3) The Future Project emphasizes positive peer relationship development in the context of meeting these psychological needs; while there has been substantial work validating the importance of peer-to-peer relationships in adolescence (Akerlof & Kranton, 2000; Akerlof & Kranton, 2002), SDT interventions have not accounted for this in the past.

Researchers of positive youth development have concluded that interventions can effectively support youth toward reaching their full potential when: (1) they provide opportunities to engage with community; (2) they provide opportunities for youth recognition; (3) they build social and emotional skills; and (4) students participate for nine-months or longer. The most common thread in all three of these areas of research is the importance of relationships, particularly the connection between a student and at least one adult in school. Mentoring interventions, which, as discussed above, have variable outcomes and highly nuanced approaches (Karcher & Nakkula, 2010). This study will also attempt to pinpoint how mentoring at The Future Project may achieve outcomes by addressing the underlying psychological needs defined by self-determination theory.

In sum, The Future Project combines an array of successful aspects from multiple self-determination interventions with those of various Positive Youth Development interventions to provide a very promising approach to foster youth motivation (Figure 1).

The Future Project program combines all of the following:

Successful aspects of self-determination interventions that have improved academic motivation

- 1) Extracurricular work that promotes autonomy and competence
- 2) Problem and project based learning
- 3) Help perceiving difficult tasks as challenges but not impossible
- 4) Connecting with an adult in the school
- 5) Addressing students personal lives
- 6) Connecting student goals to school
- 7) Mindful reflection
- 8) Identifying intrinsic goals

Successful aspects of Positive Youth Development interventions that help youth reach full potential

- 9) Provide opportunities to engage with the community
- 10) Provide opportunities for youth recognition
- 11) Build social and emotional skills
- 12) Students participate for 9 months or longer
- 13) Peer bonding
- 14) Peer collaboration on projects intended to positively influence the school community
- 15) Students proactively working with teachers and administrators on student-led school improvement plans
- 16) Student-led, mentor

Figure 1: Self-determination theory and positive youth development characteristics addressed by The Future Project.

2.4 Conceptual Framework and Research Questions

The review of positive youth development research and self-determination theory research showed overlapping gaps that the four research questions of this study aim to address. The need for: (1) further elucidation into how to foster autonomy, competence, and relatedness in the high school context, (2) exploration into the long-term effects years after school based positive youth development and self-determination theory interventions, (3) more evidence as to whether a general, non-academic PYD/SDT intervention can translate into improved academic motivation and engagement, and finally, (4) elucidation of mechanisms by which autonomy, competence, and relatedness are fostered and then translated into improved academic motivation and engagement. This study will address these gaps in its review of the impact of The Future Project on the underlying psychological needs for autonomous motivation as defined by self-determination theory, and upon academic motivation and engagement as linked to increased autonomous motivation. Data will not only include student self-perceptions, but reporting from teachers and administrators to further validate the findings.

The conceptual framework for this study is represented in Figure 2 and is based upon the four primary components of The Future Project program: Dream Team group meetings, one-on-one coaching with the Dream Director, skill building courses led by the Dream Director, and student-led projects. Figure 2 also shows how each of these programmatic activities address all of the aspects of successful programs listed in Figure 1 (numbered items included in Figure 2 in parentheses) and how these inputs are hypothesized meet the needs of autonomy, competence, and relatedness either directly or indirectly (Research Questions 1a and 1b). Bonding with the Dream Team and in one-

on-one coaching with the Dream Director should increase students' sense of relatedness. Relatedness in turn could effect confidence and self-esteem and therefore increase sense of competence. One-on-one coaching as well as group courses build students' skills and knowledge and therefore promote competence. Group events bring together Dream Team students from multiple schools and sometimes multiple cities to learn more from Dream Directors as well as connect socially through discussing their project ideas. Lastly, through learning skills and leading and building projects students are able to exercise their competence in their environment, and since the projects are of their own choosing and they largely execute them without adult direction it promotes a sense of autonomy. Meeting the needs of autonomy, competence, and relatedness in turn ought to have an impact upon students' academic motivation (Research Questions 2a and 2b).

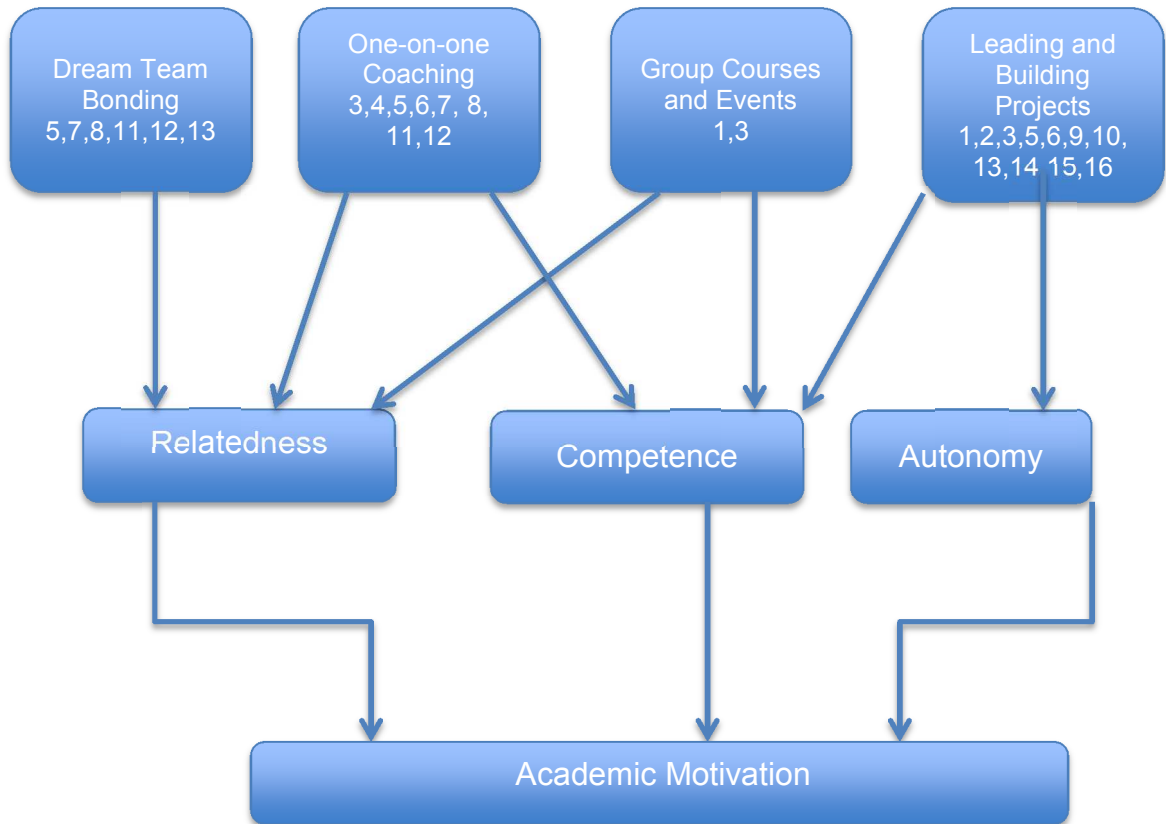


Figure 2. Visual representation of how The Future Project program model may effect autonomy, competence, and relatedness directly, and academic motivation indirectly.

This framework provides the theoretical basis behind the research questions for this study by connecting non-academic activities with academic motivation and engagement.

- RQ1: a) How do students perceive participation in The Future Project as supporting the psychological needs (autonomy, competence, relatedness) that are precursors of autonomous motivation for actively participating students?
- b) How does participation in The Future Project continue to have an impact upon the self-perceived basic psychological needs (autonomy, competence, relatedness) that are precursors of autonomous motivation for program alumni?

- RQ2: a) How does participation in The Future Project influence academic motivation and engagement?
- b) What is the nature of the relationship between autonomous motivation, or general intrinsic motivation, attributed to participation in The Future Project and student self-reported academic motivation and engagement?

Chapter 3: Methodology

3.1 Chapter Overview

This chapter describes how this study is designed to address the four research questions presented in Chapter 2: RQ1a) How do students perceive participation in The Future Project as supporting the psychological needs (autonomy, competence, relatedness) that are precursors of autonomous motivation for actively participating students? RQ1b) How does participation in The Future Project continue to have an impact upon the self-perceived basic psychological needs (autonomy, competence, relatedness) that are precursors of autonomous motivation for program alumni? RQ2a) How does participation in The Future Project influence academic motivation and engagement? And RQ2b) What is the nature of the relationship between autonomous motivation, or general intrinsic motivation, attributed to participation in The Future Project and student self-reported academic motivation and engagement?

This study is a phenomenological mixed methods approach (Creswell & Plano Clark, 2010; Creswell, 2013; Mayoh & Onwuegbuzie, 2013) using interview and survey data from students, teachers, and administrators from the 45 Future Project schools in New York, New Jersey, Pennsylvania, Connecticut, Washington D.C., Michigan, and California, and alumni nationwide.

The remainder of this chapter is divided into the following sections:

- 3.2 Methodology. The rationale behind the mixed-methods approach to this study is explained here. This study was carried out using secondary data analysis.
- 3.3 Research Context. This section presents an overview of The Future Project intervention as it pertains to this study, research sites, and participants.

- 3.4 Data Sources. A description of each of the data sources and their application to each research question in this study is presented here.
- 3.5 Data Analysis. This section describes the analysis approach for each of the four research questions.
- 3.6 Validity and Reliability. In order to account for the subjective nature of a qualitative research, this portion discusses the validity and reliability of the approach in this study.
- 3.7 Summary

3.2 Methodology

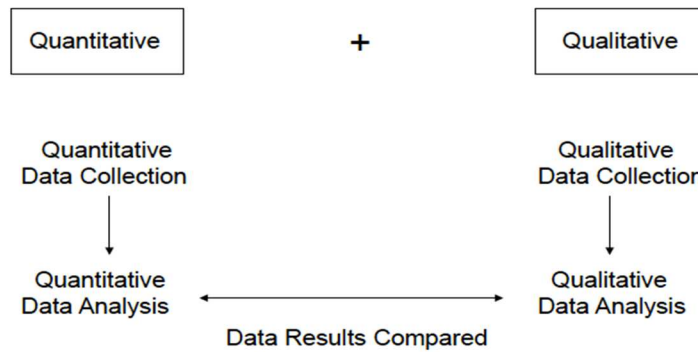
Mixed methods combine the rich context that can be captured by qualitative data and analysis with the patterns that can be determined from larger-scale quantitative data and analysis (Creswell & Plano Clark, 2010). Mixed methods retains the richness of qualitative research while attempting to compensate for the inherent limitations of qualitative research such as limited sample population and inherent researcher biases by leveraging the generalizability of quantitative findings (Commander & Ward, 2009). The primary data collected is qualitative in order to capture the richness of student psychological experience of The Future Project.

This study specifically employs a phenomenological mixed methods approach in order to capture the impact of The Future Project participation on student self-perceptions of autonomy, competence, and relatedness, and how academic motivation was influenced by participation in The Future Project. Phenomenology as a methodological approach is most fitting for this study for several reasons. First, since the definitional purpose of

phenomenology is to “describe or interpret human experience as lived by the experiencer in a way that can be used as a source of qualitative evidence” (Mayoh & Onwuegbuzie, 2013, p. 2), this is an appropriate means of assessing autonomy, competence, and relatedness. Self-determination theory posits that autonomous motivation and identification of the psychological needs of autonomy, competence, and relatedness are defined by the perspective of each individual (Deci & Ryan, 1991), thus the most accurate approach to evaluating whether someone is experiencing these psychological needs is through capturing their lived experience. Second, the data used in this study includes interviews and surveys that were collected by The Future Project in Spring 2016 for other purposes (described in more detail below in the context and participants section) and was not designed for this study, so the flexibility of phenomenology as a research methods and can therefore accommodate data that was not specifically designed for the goals of this study (Mayoh & Onwuegbuzie, 2013).

A purely phenomenological approach, as defined above, was used to explore research questions 1a, 1b, and 2b. For research question 2a this study couples phenomenology with mixed methods in order to use triangulation to increase the validity and generalizability of the findings; phenomenology alone is insufficient in this regard, since phenomenology only addresses the experience from a single perspective, and one goal of the study is to identify whether or not the effects of The Future Project may be generalizable. To this end, a concurrent nested mixed-methods approach (Figure 3) will be applied to question 2a in order to triangulate data and produce more valid and generalizable findings. Concurrent nested mixed-methods, as shown in Figure 3 entails collecting qualitative and quantitative methods simultaneously, analyzing them

separately, and then comparing the findings from the two distinct analyses. This approach serves as triangulation to increase the validity of the findings.



*Figure 3: Concurrent nested triangulation strategy. From “Mixed-Methods Research Methodologies” by S. Terrell, 2012, *The Qualitative Report*, 17(1), p. 267.*

This is a secondary data analysis study that used interviews and surveys previously collected by The Future Project for feedback and impact evaluation. Thus, the survey and interview protocols were not designed for the current study, and new instruments for the sole purpose of this study were not created in order to minimize the imposition on students, teachers, and administrators. An internal research team at The Future Project collected the data in spring of 2016 in order to look at overall program impact, feedback, and emergent themes. This data included 19 student interviews from 5 schools, 16 alumni interviews from 9 schools, 28 administrator surveys from 16 schools, 137 teacher surveys from 29 schools, and 11 teacher interviews from 7 schools. More details regarding the data collection processes, sites, participants, and instrumentation are included in Sections 3.3.2, 3.3.3, and 3.4.

3.3 Research Context

3.3.1 The Future Project Program Model. The basic structure of The Future Project program model was described in the introduction (for further description not directly relevant to this study see Appendices A-C). This section is designed to explain in greater detail how the program model maps onto the 16 characteristics listed in Figure 1.

These descriptions are presented as Table 2 here below:

Table 2
The Future Project Program Model

Program Input	Description
1) Extracurricular work that promotes autonomy and competence	The students choose what projects they take on and are in charge of executing them. This supports a sense of autonomy. Students often choose projects based on self-identified skills and strengths, which allows them to express their competence. Dream Directors also teach short interactive lessons to help students build skills such as public speaking or time management; these also increase student sense of competence.
2) Problem and project based learning	Activities are centered around the projects that students create. Sometimes these projects are based around a problem they are trying to address in their school or local community, such as kids in the neighborhood not having a safe place to play or hang out after school.
3) Help perceiving difficult tasks as challenges but not impossible	As part of the mentoring or coaching role, Dream Directors are trained to support students in seeing alternatives or to problem solve when they otherwise feel stuck or discouraged. This occurs during one-on-one discussion with the Dream Director that intentionally has students reflect on their fears or other internal barriers as well as rethink the role of failure as part of an iterative learning process. Dream Directors encourage continued action even when obstacles are met or short-term failures occur.
4) Connecting with an adult in the school	The Dream Director's primary role is to build a trusting and supportive relationship with each of the students they work with. Since Dream Directors have a designated room in the school building and are there throughout the school day, students will come by to "hang out" before and after school, during lunch and free periods, and between classes. This provides regular touch-points of unstructured interaction. Also, the nature of the role of the Dream Director is conducive to developing deep trusting

	relationships with students. Unlike other staff in the school building, the primary role of the Dream Director is not as an authority figure, but as a supportive mentor.
5) Addressing students personal lives	Because there are no strict schedules or curricular guides to follow, Dream Directors can take to time to get to know the students and support them in discussing personal problems as well as issues related to school, class work, or their projects. As described in the row above, Dream Directors are unique figures in the school setting since they are not traditional authority figures. Additionally, their job is not to focus on non-personal goals such as academic learning. This allows the sense of safety and time for students to open up about troubles or concerns they may be having. For example, it is not uncommon for a student to volunteer details about having drunk alcohol at a party, regretting it, and processing how they will handle such situations differently in the future.
6) Connecting student goals to school	During the one-on-one coaching sessions, most Dream Directors help the students explore and reflect upon how doing well in school is relevant to the larger personal goals the students have identified for themselves.
7) Mindful reflection	Also during the one-on-one coaching sessions as well as group Dream Team meetings the Dream Directors often lead students in activities or discussions that prompt reflection on their lives, goals, and values.
8) Identifying intrinsic goals	Identifying intrinsic goals is the backbone to all of the projects that the students create. Many students, when they join The Future Project cannot articulate what they value or a meaningful goal they are working towards. There are one-on-one discussions with the Dream Director, group discussions with the Dream Team, and activities led by the Dream Director—all aimed at helping students identify what is meaningful to them and how to plan goals in service of this meaning.
9) Provide opportunities to engage with the community	Students are strongly encouraged to share their projects with the school or local community through planning events or creating interactive websites.
10) Provide opportunities for youth recognition	The students are openly recognized for their efforts within the Dream Team community, at the events they create, and at the citywide and national events hosted by The Future Project. The Future Project also has a video production team that publicly shares small biographies of students on social media and through

	partnership with high profile outlets such as <i>The Atlantic</i> (https://www.theatlantic.com/national/archive/2013/07/encouraging-students-to-imagine-the-impossible/278017/)
11) Build social and emotional skills	The time spent in one-on-one coaching as well as in Dream Team meetings often involves self-reflective open discussion around both positive and negative issues that the students are experiencing.
12) Students participate for 9 months or longer	At minimum, Dream Team students join in the fall of the academic year and participate until the close of the school year. Most students join their sophomore year and remain on the Dream Team until they graduate.
13) Peer bonding	Dream Team members spend significant time building trusting and supportive relationships. From the beginning, the Dream Director has a number of icebreaker and team bonding activities that facilitate this process. Dream Team members from different schools within cities and between cities also are able to connect at periodic events. Peer-bonding within the Dream Team is the most prominent form of bonding. Primarily, students collaborate on projects together. Since these projects are the result of students identifying personally meaningful goals, they often involve disclosing very personal issues to their peers. For example, several students who had experienced the loss of a parent created an online and in-person community for students to openly express such grief and share stories. Another student who had been homeless and in a gang, but dreamed of making music found a way to fund a recording studio for his school where students from similarly troubled backgrounds could come after school to make music together. In addition to building projects together, weekly Dream Team meetings consist of personal check-ins and discussions around any issues that students need help with.
14) Peer collaboration on projects intended to positively influence the school community	While some of the student projects are independently led and executed, the majority are either led by groups of students or led by one student with a team of student helpers.
15) Students proactively working with	The Dream Teams often identify aspects of their school or educational experience that they would like to change or improve. This involves collaboration with teachers or administrators to

teachers and administrators on student led school improvement plans	execute their ideas.
16) Student-led, mentor (Dream Director) facilitated	The Future Project’s primary goal is to support students in identifying and pursuing what is meaningful to them, therefore Dream Directors never dictate what is going to happen or how. While Dream Directors may lead students in bonding or skill building activities, or expose students to new ideas and places, the fundamental nature of the programming is student driven and Dream Directors serve as supportive coaches to student identified goals.

3.3.2 Research Sites. All 45 of the schools participating in The Future Project are in urban settings. Nearly all of The Future Project schools have approximately 90% minority students and over 90% free and reduced lunch. All schools participating in The Future Project program are 9-12th grade public high schools (with the exception of one 5th-9th grade charter school) in seven major cities across the United States. The schools became involved with The Future Project for various reasons. Nearly all were connected to The Future Project by word of mouth. Some schools were turnaround schools. Some schools were slated to be closed, but were open to working with The Future Project since it was of no cost to the school and they had nothing to lose.

All schools signed an MOU prior to the beginning of each school year that included permission for The Future Project to work in the schools as well as collect surveys, interviews, and audiovisual data for internal evaluation purposes. These were contingent upon the consent and assent of students and their parents or guardians. The Future Project also administered surveys to teachers and administrators at every school,

and interviewed willing teachers. Due to lack of response and logistical constraints, the combined data represents only 37 of the 45 schools. These schools are described in the remainder of this section and summarized in Appendix C. Since all schools are in urban locations with high minority and high poverty populations, there is relatively little variation among these demographic factors; therefore, demographics have been excluded from the current study.

3.3.3 Study Participants. The data used in this study was collected from a small subset of students, alumni, teachers, and principals. Table 3 shows the distribution of participation across each of the seven Future Project cities.

Table 3
City level summary of participation in data collection

	#Student participants (# schools)	#Alumni participants (# schools)	#Teacher survey respondents (# schools)	#Teacher interview participants (# schools)	#Principal survey respondents (# schools)	#Assistant administrator survey respondents (# schools)
Newark, NJ	9(1)	1	13(3)	-	2(2)	1
New Haven, CT	5(2)	-	13(4)	2(1)	1	9(1)
Washington, DC	3(1)	1	9(2)	-	1	-
New York, NY	2(1)	10(4)	41(6)	5(3)	5(5)	1
Detroit, MI	-	4(2)	29(7)	1	5(5)	1
San Francisco, CA	-	-	18(4)	2(1)	-	-
Philadelphia, PA	-	-	14(2)	1(1)	2(2)	-
Total	19	16	137	11	16	12

3.3.3.1 Students. Student interviews were conducted on site at five of the most veteran schools participating in The Future Project (2 in New Haven, Connecticut; 1 in New York, New York; 2 in Newark, New Jersey; and 1 in Washington, D.C.) that had

been chosen for periodic observation in order to gain an in depth understanding of how The Future Project program is implemented and received. All student participants were members of their school's Dream Team between 6 months-2 ½ years at the time of the interview. Their grades ranged from 9th-12th.

3.3.3.2 Alumni. In the spring of 2016, several employees at The Future Project headquarters contacted the 75 alumni who had provided contact information to request 1:1 phone interviews. The goal was to gauge whether participation in The Future Project had long-term effects. Sixteen alumni who had graduated from 9 of The Future Project schools took part in the 1:1 phone interview process. Their graduation dates ranged from 2012-2015.

3.3.3.3 Teachers and administrators. Teachers and administrators across all 45 Future Project schools in all seven cities were invited to complete feedback and impact surveys, though administrators from only 16 schools responded, and teachers from 29 schools completed the surveys, so 35 of the 45 schools are represented from the teacher and administrator perspective.

Of the roughly 1,000 teachers across all 45 Future Project schools, only 137 from 29 schools completed the open-ended questions from the online teacher surveys. As a follow up, 11 total teachers from 7 different schools in New York, New Haven, Detroit, and San Francisco volunteered to participate in phone interviews.

For the administrator survey, 16 principals completed it along with 12 assistant administrators from 16 total schools. At the end of the academic year, Future Project employees in each of the seven cities convened with administrators to discuss the work and impact of The Future Project. The administrators who were able to attend these

sessions also completed surveys designed by The Future Project head of field operation to gain an understanding of program impact and to gather feedback from the perspective of administrators.

3.4 Data Sources

Table 4 provides an overview of the data sources pertaining to each of the research questions. More detailed descriptions of each data source are subsequently provided. To recap, these include 19 student interviews from the 5 schools targeted for in-depth exploration, 16 alumni interviews from 9 schools, 28 administrator surveys from 16 schools, 137 codable teacher surveys from 29 schools, and 11 teacher interviews from 7 schools. The protocols for the student interviews, alumni interviews, administrator surveys, teacher surveys, and teacher interviews are found in Appendices D-H respectively. Each of these data sources is described in detail in this section.

Ideally this study would include student academic achievement data such as grades and test scores in addition to the predictors of such achievement (i.e. engagement, attendance, and behavior). Achievement data is not included due to the prohibitive nature of gaining access to such information. The districts will only approve sharing a minimum of aggregated de-identified data of 45 students from any given school and with a delay of 18-months. As The Future Project becomes more established, there will be alternative options for accessing such information, but obtaining confidential data such as student grades, attendance and truancy rates was not feasible for this study. Many of the students interviewed transferred schools just before joining The Future Project; therefore, I could not obtain the students' grades or attendance prior to their participation to serve as a point of comparison.

Table 4
Data Sources Map

Research Questions	Active Student interviews	Alumni Interviews	Administrator Surveys	Teacher Surveys	Teacher Interviews
1a. How does participation in The Future Project supports the basic psychological needs (autonomy, competence, relatedness) that are precursors of autonomous motivation for current student participants?	X				
1b. How does participation in The Future Project support the basic psychological needs (autonomy, competence, relatedness) that are precursors of autonomous motivation for program alumni?		X			
2a. How does participation in The Future Project influence academic motivation, engagement, and learning social emotional skills?	X	X	X	X	
2b. What is the nature of the relationship between autonomous motivation attributed to participation in the Future Project and student self-reported academic motivation and engagement?	X	X		X	X

Others had recently graduated and had not yet provided contact information, so their consent to access grades or attendance records was also not an option.

3.4.1 Interviews. The interview protocols used in this study were semi-structured in order to elicit a more organic dialogue between researcher and participant. This is a qualitative interview approach aimed at understanding participants “on their own terms and how they make meaning of their own lives, experiences, and cognitive processes” (Brenner, 2006, p. 357).

3.4.1.1 Active Student Interviews. Semi-structured in-person student interviews were conducted in February and March of 2016 with 19 active Dream Team students from Richard R Green High School in New York, New York; Merit Preparatory Charter School and Eastside High School in Newark, New Jersey; Theodore Roosevelt High School in Washington D.C.; High School in the Community and Riverside Academy in New Haven, Connecticut. The interview questions were broad and asked the students to reflect upon topics such as what they were most excited about in life, how they had changed in the past year, and what did participating in The Future Project mean to them (see Appendix D). The students were selected based on availability when the interviewer was present. These interviews have been used as qualitative data to probe for changes in autonomy, competence, and relatedness attributed to participation in The Future Project. Additionally, these student interviews have been used to explore the mechanism linking changes in student self-reported academic motivation and engagement to autonomy, competence, and relatedness in the context of the Future Project. All interviews were recorded and transcribed. Student interviews ranged from 8

minutes to 45 minutes; this variability was likely due to the open-ended nature of the questions.

3.4.1.2 Alumni Interviews. Alumni interviews were conducted over the phone with 15 self-selected alumni in June 2016. These interviews will also be coded for enduring evidence of changes in autonomy, competence, and relatedness attributed to participation in The Future Project. The interview protocol consisted of two primary questions; the first asked alumni to describe what areas of their lives were currently thriving and to reflect on why, and the second asked them to reflect back on their experience with The Future Project and to describe if and how it has had a continuing impact on their lives (see Appendix E). All interviews were recorded and transcribed. The alumni interview protocols were brief with only three open-ended questions simply designed to look for emergent themes in alumni perspectives on if and how they have changed because of participation in The Future Project and what they are currently doing in life and how they feel participating in The Future Project has influenced that. For this current study, the interviews will be coded in their entirety for evidence of having experienced greater autonomy, competence, and relatedness while participating in The Future Project and evidence of enduring motivation to succeed in their post-secondary education. Alumni interviews ranged from 10 minutes to 35 minutes likely due to the open-ended nature of the questions.

3.4.2.3 Teacher Interviews. Teachers who completed the online survey had the option to sign up for a follow-up telephone interview. The interview protocols were developed by The Future Project research team and consist of four questions around perceived impact and suggestions for improvement (see Appendix F). Specifically, the

impact questions prompted teachers to reflect on any changes they had seen in individual students as well as the general school climate. These were conducted throughout the month of June 2016. All interviews were recorded and transcribed. Teacher interviews were scheduled for exactly 30 minutes each.

3.4.2 Surveys. Researchers typically employ surveys in order to obtain succinct and clear-cut responses to close-ended questions (Fontana & Frey, 2005; Yin, 2011) that some researchers believe lead to more definitive and accurate analysis (Fowler & Cosenza, 2009). This study used both close-ended survey questions as well as open-ended questions. Open-ended survey questions allow for both the richness of content that one might obtain with an interview and the large volume of responses that it is possible to gather with the relative ease of an online survey.

3.4.2.1 Administrator Surveys. Administrator surveys were completed at a brunch held in each city at the close of the 2015-2016 academic year. The surveys were designed to gather feedback on how administrators perceive the impact of The Future Project on participating students and their school as a whole. Two of the survey questions were used in this study. The first probed whether administrators perceived a change in student engagement as a result of The Future Project. The second asked about changes in student attendance as a result of The Future Project (see Appendix G). These survey questions were used to triangulate evidence of changes in academic motivation and engagement in the student and alumni interviews and the teacher surveys.

3.4.2.2 Teacher Surveys. Online teacher surveys were available to teachers at all 45 of The Future Project schools and completed voluntarily by teachers in 29 of the schools during May-June 2016. The open-ended questions used in this study asked

teachers to reflect upon any perceived impact – good or bad - the Dream Director has had on their students, school, and faculty (see Appendix H). Results from these open-ended questions were included in the analysis to triangulate evidence of changes in academic motivation in the student and alumni interviews, and administrator surveys.

3.5 Data Analysis

3.5.1 Overview. The data analysis of this study is very complex for several reasons. All of the data available, with the exception of principal survey responses, was qualitative, so succinct statistical analysis was not an option. Additionally, five separate constructs were being measured, two of which were analyzed from the perspectives of both students and teachers. As a result, seven coding schemes were developed in order to answer the research questions (Table 5).

The seven coding schemes addressed the following needs: (1) To measure student and alumni autonomy, competence, and relatedness, as well as (2) The Future Project impact on those. Additional coding schemes were also needed to measure (3) student and alumni self-reporting of academic motivation and (4) student self-reporting of academic engagement. In order to increase the validity of the student self-reporting, coding analysis of teacher perspectives on student (5) academic motivation and (6) engagement was also included. Lastly, (7) a coding scheme was needed to identify which of The Future Project program inputs were referenced.

Training for coding involved the primary researcher plus three other research analysts. The first two analysts participated in coding for Research Questions 1a, 1b, and 2a. One was a doctoral student of education at George Mason University, another had

previously volunteered with The Future Project and had several years of professional experience working on educational research teams affiliated with The Wharton School at the University of Pennsylvania. The third analyst was an employee at the national headquarters of The Future Project and participated in coding for Research Question 2b. Since most of the coding schemes involved different training and coding procedures, these will be described in detail along with the theoretical basis, procedures, and examples for each coding schemes in Sections 3.5.2 – 3.5.5. Online statistical software was used to calculate the Cronbach’s alpha reliability scores when applicable (Wessa, 2017).

Table 5
Overview of data analysis

Research Question	Coding Approach	Analysis Summary
RQ1a	<p>Coding Scheme1 (Appendix I): Student interview coded for three levels of autonomy, competence, and relatedness</p> <p>Coding Scheme 2 (Appendix J): Student interviews coded for three levels of attribution of changes in autonomy, competence, and relatedness to The Future Project</p>	<p>1. Student levels of autonomy, competence, and relatedness and attribution summarized (Section 4.2.1)</p> <p>2. Student combined level of autonomy, competence, and relatedness (autonomous motivation) compared with attribution level (Section 4.2.2)</p> <p>3. Relationship between student psychological needs and attribution to The Future Project (Section 4.2.3)</p>
RQ1b	<p>Coding Scheme 1: Alumni interviews coded for three levels of autonomy, competence, and relatedness</p> <p>Coding Scheme 2: Alumni interviews coded for three levels of</p>	<p>1. Alumni levels of autonomy, competence, and relatedness and attribution summarized (Section 4.3.1)</p> <p>2. Alumni combined levels of autonomy, competence,</p>

	<p>attribution of changes in autonomy, competence, and relatedness to The Future Project</p>	<p>and relatedness (autonomous motivation) compared with attribution level (Section 4.3.2)</p> <p>3. Relationship between alumni psychological needs and attribution to The Future Project (Section 4.3.3)</p>
RQ2a	<p>Coding Scheme 3 (Appendix K): Student interview excerpts coded for three levels of academic motivation</p> <p>Coding Scheme 3: Alumni interview excerpts coded for three levels of academic motivation</p> <p>Coding Scheme 4 (Appendix L): Student interviews coded for the presence of each of the three forms of engagement</p> <p>Coding Scheme 5 (Appendix M): Teacher open-ended survey responses coded for student motivation</p> <p>Coding Scheme 6 (Appendix N): Teacher open-ended survey responses coded for student engagement</p> <p>Principal Likert-scale survey responses for student engagement summarized for comparison</p>	<p>1. Summary of student motivation and engagement (Section 4.4.1)</p> <p>2. Summary of alumni motivation (Section 4.4.1)</p> <p>3. Summary of teacher reporting of student motivation and engagement (Section 4.4.2)</p> <p>4. Summary of principal reporting of student engagement (Section 4.4.2)</p> <p>5. Comparison of student, teacher, and principal reporting of student motivation and engagement. (Section 4.4.3)</p>
RQ2b	<p>Coding Scheme 7 (Appendix O): Student interviews and teacher open-ended survey responses and coded for The Future Project program inputs</p>	<p>1. Comparison of autonomous motivation and attribution with student academic motivation (Section 4.5.1)</p> <p>2. Emergent mechanistic themes based on student and alumni reporting on program inputs and autonomy,</p>

		<p>competence, and relatedness (Section 4.5.1)</p> <p>3. Emergent mechanistic themes based on student, alumni, and teacher reporting of program inputs and academic motivation and engagement (Section 4.5.2)</p> <p>4. Case Studies presenting comprehensive findings from research questions 1a, 1b, and 2a to illustrate plausible mechanisms of program inputs and all of the outcomes (Section 4.5.3)</p>
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3.5.2 RQ1a. How do students perceive participation in The Future Project as supporting the psychological needs (autonomy, competence, relatedness) that are precursors of autonomous motivation for actively participating students. In order to answer this research question two coding schemes were needed. One was to measure students’ psychological needs of autonomy, competence, and relatedness. The second was to determine if change in students’ psychological needs could be attributed to The Future Project. These two coding schemes, their theoretical development, coding training procedures, and examples are all presented in this section.

3.5.2.1 Coding Scheme 1: Autonomy, competence, and relatedness. The theoretical background to develop a coding scheme to identify students’ self-perceived was based upon the definitions and operationalization of these three constructs described in depth in Sections 2.3.4.1 – 2.3.4.3 (examples with greater discussion will be provided later in this section). Self-determination theory researchers Deci and Ryan have determined key characteristics that could be identified as evidence of autonomy,

competence, and relatedness (Deci And Ryan, 1985; Deci and Ryan, 1991; Deci and Ryan, 2000).

For this study, student interview transcripts were mined for these key characteristics and then assigned a level 1, 2, or 3 for each autonomy, competence, and relatedness to indicate the extent to which the student embodied each psychological need. A level 1 was assigned if there was no evidence in the students' transcript of any of the key characteristics. A level 2 was assigned when there was evidence, but it was limited to certain external contexts that supported the student's experience in regards to each psychological need. A level 3 was assigned if the student appeared to be the source of their own experience of the key characteristics, and therefore the perception of autonomy, competence, and relatedness were independent of external context. These levels were theoretically based upon the application of an organismic dialectical perspective to self-determination theory. The organismal dialectical perspective assumes that a person is always striving to psychologically grow and integrate such that they can operate as their authentic fully actualized selves in any context. Applied to self-determination theory, this provides a trajectory of growth from no sense of psychological needs being met (level 1 in the coding scheme), to a context dependent sense (level 2 in the coding scheme), to a self-embodied context independent perception of psychological needs being met (level 3 in the coding scheme) (Deci and Ryan, 2004). Coding Scheme 1 combines the definitions and key characteristics of autonomy, competence, and relatedness with this three level approach (Appendix I).

To code for autonomy, the codebook provided exemplars from the current data set based on the definition of autonomy from Deci & Ryan (1991), which stated that

autonomy “encompasses people’s striving to be agentic, to feel like the ‘origin’ of their actions” (p. 243). An exemplar from a student interview is here below:

Something that I’m most passionate about is my life classes [she teaches a Life class after school to her peers]. Usually I’m up all night writing my lesson plans and typing it all out and I’m so into it. And I wake up and am like, “Oh my God, I should add this into my life class” or I should do this, or I see something on TV and I think, why don’t I add this or do that. It’s kind of an ongoing process either writing or watching or taking down notes or waking up at 3am and, whoa revelations!)

This exemplar represented a level 2 because the student exhibited a sense of control and choice over designing her life classes, but this sense of agency was limited to these classes, so it was context dependent. If the quote discussed a similar sense of having control and choices in multiple contexts then it would have been a level 3.

Autonomy and competence are distinguishable in the sense that autonomy is feeling in control and able to make choices, whereas competence is the belief you have the skill and ability to actually accomplish what you set out to do, and that it is valued by others. Competence is defined as encompassing “people’s strivings to control outcomes and to experience effectance; in other words, to understand the instrumentalities that lead to desired outcomes and to be able to reliably effect those instruments” (Deci & Ryan, 1991, p. 243). A student exemplar for competence would be:

I’m a rapper since I was a little kid... I am very good talker, I could talk in front of a crowd of 3 or three thousand... I used to go Bishop was middle school, I mean elementary and middle school [sic] and they had this little recital thing and they had me rap the Will Smith part from the Men in Black movie at the credits, the end credits, the song. and I remember just going out and like, I was lip-synching it and was just acting the fool but I feel like that really broke the barrier for me, like everybody was cheering me on, and I liked that feeling, you understand, and so from that point on, every like little thing they did in school like little... I was always in front of things

This quote represents competence because it is clearly a skill this student has developed that others acknowledge. If this student's entire interview transcript did not indicate skill development in other areas then this student would be coded overall as a level 2, because their competence is context dependent – rapping or talking in front of crowds. If the student interview were to also include at least one other example of skill development then they would be assigned a level 3 overall.

Relatedness is defined as encompassing “a person's strivings to relate to and care for others, to feel that those others are relating authentically to one's self, and to feel a satisfying and coherent involvement with the social world more generally” (Deci & Ryan, 1991, p. 243). A student exemplar would be:

When you go on a basketball team you don't know nobody. You basically build a bond with each player on the team. You build a brotherhood. You got a big family. I like being around people I can be comfortable with.

This quote clearly represents building trusting connections with others. In isolation it is unclear if this student only feels connected to the other players on the team, which would be a level 2, or if he experiences these connections elsewhere also. If the remainder of the interview transcript holds evidence of the latter then the student is assigned level 3 relatedness because of their ability to develop trusting relationships in multiple contexts (For a holistic view of the definitions and exemplars for Coding Scheme 1, see Appendix I).

Initial coding training for Coding Scheme 1 began by convening the primary researcher and two additional coders with backgrounds in education research mined the first three student interview transcripts to assign levels 1, 2, or 3 of autonomy, competence, and relatedness to all relevant instances. Then they assigned each student

interview in its entirety a single level for each autonomy, competence, and relatedness based on the cumulative nature of all coded instances. Mathematical averages could not necessarily be used, so discussion and consensus were used to assign a single level to each student for each psychological need. The training session required a single three-hour meeting. At the end, clarifying revisions were made to the coding scheme to improve its accuracy of use. The coders then separately coded the next three student interviews and one week later reconvened to compare results, come to consensus, and further revise the coding manual. This second meeting lasted two hours. In the end, each student received three scores, one for each autonomy, competence, and relatedness.

The coders then independently mined the remaining 13 interview transcripts with the same method, and afterwards reconvened to come to consensus on the overall levels of autonomy, competence, and relatedness for each interview. Cronbach's alpha scores were acceptable for competence and relatedness, but low for autonomy (this will be addressed in the Validity and Reliability Section 3.6.1.3): Autonomy = .576; Competence = .830; Relatedness = .756. The coders reconvened to discuss all discrepant codes and come to consensus on a single level for each psychological need for each student. The coding scheme was again revised prior to applying it to the alumni data for research question 1b.

3.5.2.2 Coding Scheme 2: Attribution of change in autonomy, competence, and relatedness to The Future Project. After student interviews were coded for levels of autonomy, competence, and relatedness; the coders reviewed the interview transcripts in their entirety to then code for whether and to what extent the student attributed any change in autonomy, competence, or relatedness to The Future Project. Attribution is an

important component of impact evaluation (Garbarino & Holland, 2009; White & Phillips, 2012). One approach to determining attribution of a program is the identify cause and effect through the General Elimination Methodology (GEM) (Scriven, 2008). “The methodology entails systematically identifying and then ruling out alternative causal explanations of observed results” (White & Phillips, 2009, p.11). The attribution codebook for this study is based on this premise.

This coding theory was applied to develop a means of determining three possible levels of attributing change to one’s autonomy, competence, and relatedness based on participation in The Future Project. A level one indicates that The Future Project had little to no effect on each autonomy, competence, and relatedness. A level 2 indicates that participating in The Future Project either enhanced or further reinforced one’s sense of autonomy, competence, and relatedness; and is assigned also if the student only implies that The Future Project played a role or it could be deduced based on a students’ anecdotal recounting of some sort of change that the coders could deduce overlapped with the timing of the student’s participation in The Future Project. Lastly, a level 3 indicates that The Future Project had a dramatic influence on the student’s sense of autonomy, competence, and relatedness. This is evidenced by the students’ explicit crediting of The Future Project for any changes in autonomy, competence, and relatedness and the extent of change.

A level 1 attribution was assigned for each autonomy, competence, and relatedness when the student never mentioned The Future Project in relation to any indicators of growth in each of these psychological needs. Therefore an example cannot be provided.

For level 2, the student must indicate that The Future Project in some way has helped them enhance their development of autonomy, competence, or relatedness. The following quote is representative of this:

My dream...is to be an actor. I take acting classes at Drew University. I go today after school... I did improv a couple years ago when I was younger, but I've been doing it for a while....she [the Dream Director] is helping...she is the one who got me into the Drew acting classes – me and a couple other students.

This quote is an example specifically of level 2 competence attribution to The Future Project because the student had already identified and begun developing the skill of acting, but the Dream Director helped him take it further by supporting him to enroll in the acting classes.

Level 3 attribution was assigned when there was evidence that the student's trajectory of experiencing each autonomy, competence, or relatedness. The following quote represents relatedness attribution:

I can actually remember the first [Dream Team] meeting I went to. It was a real emotional meeting. Everybody were talking about, what were we talking about, I don't know. It just impressed me to see...that this group was actually planning out things and talking about their emotions and stuff with each other. It was impressive, like you just don't see groups like that in a school like this.

This quote is an example of level 3 attribution for relatedness because the student explicitly indicated how The Future Project dramatically changed his perception of how to connect closely with others in a context where previously he had thought it impossible (For a holistic view of the definitions and exemplars for Coding Scheme 2, see Appendix J).

Coders were trained in the same way as they were trained for Coding Scheme 1. The primary researcher and the same two additional coders convened to mine together the first three student interview transcripts to assign levels 1, 2, or 3 of autonomy, competence, and relatedness attribution to all relevant instances. Then again then assigned each student interview in its entirety a single level for each based on the cumulative nature of all coded instances. As with Coding Scheme 1, mathematical averages could not necessarily be used, so discussion and consensus were used to assign a single level to each student for each psychological need. The training session also required a single three-hour meeting. At the end, clarifying revisions were made to the coding scheme to improve its accuracy of use. The coders then separately coded the next three student interviews, assigned one level for each psychological need to each student interview, and one week later reconvened to compare results, come to consensus, and further revise the coding manual. This second meeting lasted two hours.

The coders then independently mined the remaining 13 interview transcripts with the same method, and afterwards reconvened to come to consensus on the overall levels of autonomy, competence, and relatedness for each interview. In the end, each student received three attribution scores, one for each autonomy, competence, and relatedness.

Cronbach's alpha reliability scores were low for autonomy attribution and relatedness attribution (this will be discussed in Validity and Reliability Section 3.6.1.3), but acceptable for competence attribution: Autonomy attribution = .531; Competence attribution = .797; Relatedness attribution = .409. The coders reconvened to discuss all discrepant codes and come to consensus on a single level of attribution to The Future Project for each psychological need for each student.

3.5.3 RQ1b. How does participation in The Future Project continue to have an impact upon the self-perceived basic psychological needs (autonomy, competence, relatedness) that are precursors of autonomous motivation for program alumni. To answer research question 1b, the same coding scheme and processes used to answer research question 1a were also used. The only difference was the data set was alumni interview transcripts instead of student interview transcripts. Therefore, the theoretical development, coding training and procedures will not be repeated in this section. Cronbach's alpha was calculated for the alumni coding, and those results as well as examples from the alumni data are provided here below.

3.5.3.1 Coding Scheme 1: Autonomy, competence, and relatedness. Despite multiple revisions of Coding Scheme 1 from the analysis for research question 1a, the Cronbach's alpha scores actually decreased (this will be discussed in Validity and Reliability Section 3.6.2.3): Autonomy = .384; Competence = .479; Relatedness = .433. The coders reconvened to discuss all discrepant codes and come to consensus on a single level for each psychological need for each student.

3.5.3.2 Coding Scheme 2: Attribution of change in autonomy, competence, and relatedness to The Future Project. Cronbach's alpha reliability scores for coding of all alumni data varied widely (this will be discussed in Validity and Reliability Section 3.6.1.3): Autonomy attribution = .474; Competence attribution = .803; Relatedness attribution = .655. The coders reconvened to discuss all discrepant codes and come to consensus on a single level of attribution to The Future Project for each psychological need for each student.

3.5.4 RQ2a. How does participation in The Future Project influence academic motivation and engagement. Coding Schemes 3-6 were used to answer this research question. Coding Schemes 3 and 4 (Appendices K and L) measured student motivation and engagement respectively. Both coding schemes were applied to the 19 active student interview transcripts, but the engagement codebook solely was applied to the 16 alumni interviews. Coding Schemes 5 and 6 were developed to address teacher perceptions of student motivation and engagement (Appendices M and N) respectively. Lastly, school administrator survey items that were relevant to student engagement were summarized for perspectival comparison.

3.5.4.1 Coding Scheme 3: Student self-reported motivation. The detailed definitions and examples for each level in Coding Scheme 3 was informed by the Patterns of Adaptive Learning Scale (PALS) subscale for performance-approach goal orientation (Midgley, 2000) combined with research into student self-reporting in qualitative approaches to motivation measurement (Fulmer & Fritjers, 2009; Perrot, 2001). As with Coding Scheme 1 and 2, Coding Scheme 3 also assigns each student a level 1, 2, or 3 for academic motivation. These three levels were derived from the SDT theoretical distinction between no motivation (level 1), extrinsic motivation (level 2), and intrinsic motivation (level 3). Previous studies measuring motivation have also grouped student motivation subscales into these three categories as well (Guthrie et al., 2005). These three distinctions are important to make because they are associated with increasing long-term life satisfaction and mental and physical health as discussed in the literature on SDT in Chapter 2. While extrinsic motivation is preferable to amotivation, it is not associated with the other long-term outcomes that intrinsic motivation is.

In Coding Scheme 3, level 1, amotivation entails student dislike of school or apathy towards school. Level 2, extrinsic motivation is indicated by one or more of the following: seeking reward, recognition, good grades without relation to a larger goal, compliance, competition. Level 3, intrinsic motivation is indicated through one or more of the following: curiosity, involvement, enjoyment, or seeing the importance or value of the academic experience. These will be discussed further along with examples of the application of these codes later in this section. (For a holistic view of the definitions and exemplars for Coding Scheme 3, see Appendix K)

Here below is an example of level 1, amotivation:

I should be doing schoolwork but at least I'm honest about it, and I do get my practice in, you understand. So it also reassures me that I'm a very smart person and sometimes I under(deem) myself for the simple fact that a teacher may tell me that I'm not doing this and that may be true but it's also true laziness, and that's a thing I need to work on.

This student explicitly comments on his laziness towards school and not doing what his teacher asks. This is representative of an ambiguous or apathetic attitude listed as evidence for lack of motivation in Coding Scheme 3.

The following quote is an example of level 2, extrinsic motivation:

A lot of people in my family struggled and dropped out of school early and I wanted to be different, go to school, get good grades, and do what I'm supposed to do and make something out of myself.

Here, this student is motivated to do well, not out of inherent enjoyment of the experience or how it is valuable to her with respect to her future goals, but out of recognition and pride. While this is preferable to apathy or dislike of school, this type of motivation has not been associated with greater health and well-being in the long run.

An example of level 3, intrinsic motivation is presented below:

Interviewer: Anyway, you have these goals of going to college, studying abroad, becoming a therapist. Are you doing anything now to work towards that in particular? Student: Well I'm in psychology class, AP psychology, so I guess that kinda helps.

This student has identified a field of study that interests her and a related career path, psychology. As a result, she sees value in her advanced placement coursework and has connected that to longer-term goals such as studying abroad and going to college. There is no indication that she is pursuing these for external reasons such as pride or recognition or compliance. This form of intrinsic motivation is more likely to confer a healthy and fulfilling life in the long run.

Prior to training and coding for academic motivation and engagement, the primary researcher pulled excerpts of all references to school or academics from each of the student and alumni interview transcripts since the majority of student and alumni interviews had no relevance to school. Only these excerpts were used for the training and coding of student and motivation and student engagement. The coders initially convened for training and applying codes to the first 20% of the student interview excerpts and the first 20% of the alumni interview excerpts. This training session required two hours. Together they assigned an overall level of academic motivation to each student. They then independently coded the remaining excerpts, assign an overall score for each student, and then reconvened two weeks later to discuss discrepant codes. The reconvening also lasted two hours. The Cronbach's alpha score for coding student interviews was .722. For the alumni interviews, the Cronbach's alpha score was .781. The team of coders reviewed all discrepant codes and consensus was reached.

3.5.4.2 Coding Scheme 4: Student self-reported engagement. The coding scheme around student self-reported engagement is based on well-established subsets of

engagement: affective, behavioral, and cognitive, and adapted from a comprehensive list of validated self-reported student engagement items (Lam et al., 2014). Affective engagement looks at the emotions associated with interactions between the student and their schoolwork as well as their emotional relationship with the general school setting (which includes interactions with peers and teachers). Examples include: I am very interested in learning; I think what we are learning in school is interesting; I like what I am learning in school. Behavioral engagement is defined by a student's active and visible participation in academic, social, and extracurricular activities. This also includes positive conduct, following rules, and good attendance. Examples include: I try hard to do well in school; I work as hard as I can, when I'm in class; I participate in class activities. Cognitive engagement refers to how invested a student is in their learning. It looks at how thoughtful and strategic they are in their learning, the extent to which they invest their time, and whether they persevere in order to master a skill or content knowledge. Examples: When I study, I understand the material better by relating it to things I already know; When I study, I figure out how the information might be useful in the real world; When learning new information, I try to put the ideas in my own words.

Unlike Coding Schemes 1-3, Coding Scheme 4 was not designed to identify varying levels of each form of engagement, rather the codes were applied in a binary fashion. This was due to the scant nature of the relevant data for coding engagement. The interview content did not provide the illustrative descriptions of in classroom participation (or lack thereof) that would have been needed to code for engagement in a more nuanced way. For example, if there was one or more instance of affective engagement in a student's interview then that student was assigned a 1 for affective

engagement. If not evidence was found then the student was given a 0 for affective engagement. The same binary system applied for both behavioral and cognitive engagement. (For a holistic view of the definitions and exemplars for Coding Scheme 4, see Appendix L)

The same student interview excerpts that were coded for academic motivation were used for engagement. To reiterate, alumni interviews were not mined for examples of engagement. This was due to the nature of the interview content – it did not have codable instances of engagement.

The following quotes are evidence of student affective and behavioral engagement respectively (There was no evidence of student cognitive engagement in the data mined for this study, therefore no example is included here):

I'm excited about coming to school and trying to make myself better than what I see in the world.

This was coded for both “I like my school” and “Most mornings I look forward to going to school” among the affective engagement codes. Since the coding is not additive, simply binary, double coding is irrelevant in this situation.

The quote here below is a behavioral engagement exemplar:

I feel like they [Dream Team] not only help me with stuff like this but they push me to do better for myself, cuz all of us try to do good in school and get good grades and stuff like that. Seeing that makes me want to do better in school too.

This quote represents behavioral engagement in the form of “I try hard to do well in school” since this student explicitly states she is trying to “do good in school.”

As with Coding Scheme 3, the primary researcher and two other analysts convened to initially apply Coding Scheme 4 to the first 20% of student excerpts. This

training session required two hours. Together they assigned an overall level of academic motivation to each student. They then independently coded the remaining excerpts, assign an overall score for each student. The Cronbach's alpha scores were as follows (this will be discussed further in Validity and Reliability Section 3.6.3.3): affective engagement = .454; behavioral engagement = .567; cognitive engagement = 1 (since no codable evidence was found by any team member). The coders then reconvened to discuss all discrepant codes and come to consensus. The reconvening lasted two hours.

3.5.4.3 Coding Scheme 5: Teacher Perspective on student motivation. In order to strengthen the results from coding student academic motivation and engagement, teacher open-ended survey responses were used to triangulate the assessment. Coding Scheme 5 was developed to measure teacher perceptions of student motivation. The codes for teacher perspectives of student motivation were adapted from previously validated survey scale of teacher perceptions of student motivation (Hardre et al., 2008). All thirteen items from the scale were listed as possible codes. Some examples are:

- The Future Project students general pay attention and focus on what I am teaching;
- The Future Project students are genuinely interested in what they are asked to learn in my class;
- The Future Project students are engaged in my class because they see the relevance of the content in their world (for the complete Coding Scheme, see Appendix M).

As with Coding Scheme 4, a binary system was used. If a teacher response had one or more coded instance of perceived student motivation, then the response was given a 1. If there was no evidence then it was assigned a 0.

Below are examples of coded instances of teacher perception of student motivation:

Having a dream director in our school has allowed students to become more independent. With the work Joyce has done with the Dream Team, it has inspired students to become more independent and actively seek out change on their own, instead of being passive. Working to motivate students is a very difficult task. Allowing students to become more independent in their way of thinking, as well as independent in their actions, is a very important lesson to learn.

This first quote is an example of the code, “TFP students generally do class-related tasks and assignments willingly.” The teacher discusses how because of the Dream director, students are more independently motivated in school. This indicates students’ willingness to do school related tasks.

Students are able to take more ownership of their environment and dreams. For example, they created a Black History Month experience, Science Fair, and Talent Show. They also go on trips to experience their dream jobs. None of these things existed last year. When I talk to my students, they are able to tell me exactly what they need to do in order to achieve their dream jobs.

This second quote is an example of “TFP students are motivated to work in school because they see how education has a place in the futures they see for themselves.” Here there is evidence that the Dream Director has helped students envision their futures and develop goals, which has influenced their desire to do well in school.

As with training and coding procedures for Coding Schemes 3 and 4, the primary researcher and two additional coders convened to mine the initial 20% of the teacher responses for evidence of teacher perception of student motivation due to The Future Project. This training session required two hours. Together they assigned a 1 or 0 to each teacher response. They then independently coded the remaining responses. Out of the hundreds of the teacher responses, the three coders independently only found 22 responses showed any evidence of teacher perception of academic motivation. Due to this small number, Cronbach’s alpha was not calculated (this will be discussed in Validity and

Reliability Section 3.6.3.3.). The coding team did reconvene to come to consensus on these assigned codes. This reconvening lasted approximately one hour.

3.5.4.4 Coding Scheme 6: Teacher Perspective on Student Engagement.

Measuring teacher perspectives on the three forms of student engagement has been previously researched (Skilling et al., 2016). Coding Scheme 6 is derived from the engagement spectrum developed by Skilling et al. for such qualitative data analysis purposes. Their engagement spectrum was more nuanced in that it differentiated disengagement, variable engagement, and substantial engagement. Due to the lack of robust detail in the data for this current study, Coding Scheme 6 was designed to work in binary, where coders were to simply indicate the presence or absence of evidence of student engagement. For this reason, Coding Scheme 6 was only comprised of the substantial engagement items for each affective, behavioral, and cognitive engagement from Skilling et al.'s engagement spectrum. Disengaged items were not included to simplify the coding process since any teacher response that either did not mention student engagement or discusses it negatively was assigned 0. Variably engaged items were omitted because the data lacked the detail that would render them applicable. If a teacher response showed evidence of substantial engagement in one or more of the types of engagement then the response was coded as a 1. All others were designated 0.

Substantial affective engagement items included: seems happy, excited; confident; increased self-esteem, enjoys attentions. Behavioral engagement items included: on task; frequent participation; wants to answer questions, wants to learn, improve, do well; perseveres; interacts in class and group work. Cognitive engagement items included: listening well to peers and teachers; improved communication with others

around subject matter/school; interested in trying different ways of problem solving; curious, asks questions to improve learning; likes to help others; likes to work ahead – doing more than what is required.

The following quote is an example of both affective and behavioral engagement:

Students feel empowered. They see what is possible, and they become more motivated to move in a goal-oriented direction (Teacher 40, School 10).

Here the teacher indicated the students' positive emotions regarding school, which provides an example of perceiving affective engagement. This is also evidence of behavioral engagement because moving in a goal-oriented direction implies that students are likely on task, participate, and persevere more than before. It would not represent cognitive engagement because there is no insight into specifically how the students engage with class material.

The following quote is an example of a teacher perspective on how students are more cognitively engaged due to The Future Project:

Dream Director worked with students to run assemblies, work in leadership groups, and make school culture more positive. Students have been working together on projects and thinking of ways to support new students.

This was coded for teacher perception of student cognitive engagement because students working together on projects and leading others are evidence of the cognitive engagement items of “improved communication with others” and “doing more than what is required.” (For a holistic view of the definitions and exemplars for Coding Scheme 6, see Appendix N).

Training of coders was identical to that of Coding Scheme 6. The team met for initial training to code the first 20% of responses. They then coded all remaining

responses independently and later reconvened to discuss discrepancies and come to consensus. Here again, Cronbach's alpha was not calculated here either due to the sporadic instances of codable responses (this will be discussed in Validity and Reliability Section 3.6.3.3).

3.5.4.5 Principal survey. The last data source used to assess changes in student engagement was the administrator survey. The first question asks about attendance, which research has determined to be an indicator of student engagement (Lam et al., 2014) and the second question asks about engagement directly (Appendix G). In order to further triangulate student and teacher data on student engagement, the administrator survey responses were grouped based on whether or not they indicated positive change in student attendance and engagement or not. These findings will be discussed in conjunction with the results of the other analysis for research question 2a.

3.5.5 RQ2b. What is the nature of the relationship between autonomous motivation attributed to participation in the Future Project and student self-reported academic motivation and engagement. In order to further elucidate the mechanism by which participation in The Future Project may ultimately influence academic motivation and engagement, this study sought to identify explicit connections between increased autonomy, competence, or relatedness attributed to The Future Project and changes in academic motivation and engagement. Here applying a phenomenological approach becomes particularly salient to providing the nuanced details needed to better understand the mechanism involved (Fulmer & Frijters, 2009).

3.5.5.1 Coding Scheme 7: The Future Project program inputs. To answer this research question, data that had been coded for the previous research questions were then

again coded to indicate which, if any, of the 16 program inputs were mentioned in conjunction with autonomy, competence, relatedness, motivation and engagement. This process of beginning with one category (in this case the outcomes from the previous research questions) and systematically relating it to another category is a technique known as selective coding (Matthew & Price, 2010). Coding Scheme 7 was simply a list of the 16 program inputs and their description to use as a reference during this selective coding process.

The following quote is an example from a student interview excerpt that had been coded for relatedness for research question 1a. Here it was also coded for input 13. peer bonding.

R: Yeah actually now I can trust people more because it was hard to do that at first, but now like, once I like, I see like I always gotta watch my back with people and stuff like that cuz you know some stuff always happens, but it's just now I'm like more open to trusting people and stuff like that.

I: Cool! So is the Dream Team a really good space for that for you?

R: Oh yes, definitely! It's like real open and we can say what we want and we won't get judged for it and stuff like that and that's like the type of energy you need all the time.

This quote was coded for the input of peer bonding since the student directly discusses the trusting and nonjudgmental support of the Dream Team members.

This next quote is an example that had been coded for student autonomy for research question 1a and for research question 2b was coded with the input of 8. identifying intrinsic goals.

Sometimes I did just want to hang with my friends, but then I thought about it and you can hang with your friends anytime, but there's only certain moments you can actually be something, you can actually do something with your time. And time is precious, you don't live forever, so

for me I was just thinking I hope something good happens this year. Especially where I come from. You don't have a lot of opportunities, there's a lot of bad stuff, so for me to be in the Future Project it really helped to see there's more to life than what it is right now... So I'm trying to do my best in the academics I'm really good at, which is math. I feel like the majors I want to study in, they involve a lot of math so if I do good in that then they might see potential in me and want to accept me.

This student referenced seeing "there's more to life than what is right now" because of The Future Project which inspired her to not just "hang" with her friends. She had identified her goal of going to college and having majors she is motivated to pursue.

The following quote is from a student who had been coded for behavioral academic engagement due to the improvement in anger management at school. Three program inputs were connected with this: 4.connecting with the Dream Director, 11.Building social and emotional skills, and 13. Peer bonding.

I: Do you feel like you've changed in other ways?

R: My anger because I used to have very bad anger issues, but then that's how [Dream Director], and not just [Dream Director] but the whole dream team, they support me if I have a problem. They're going to try and help me solve it without using violence. I got to understand I don't need to be violent and not everything's got to be all serious and end up like that. There's more ways to go about things.

Here the student references how both the Dream Director and the Dream Team support him if he has a problem; these are indicators of bonding with an adult and peers. Since he is learning to control his anger through the context of The Future Project that is representative of 11. Building social and emotional skills.

Lastly, the following is an example of program inputs coded in a teacher interview response. This was coded for 4. Connecting with the Dream Director, and 13. Peer bonding.

[The Dream Director] is awesome. It's simple. She evokes joy in our school and creates an environment of warmth and support. One club she leads weekly is the "Hot topics with hot pockets" club. Kids who don't want to go to lunch or who are interested in current events have a safe place to hang out and collaborate. She's awesome.

Here the teacher claims that the Dream Director herself provides “warmth and support” as well as creating an environment where students can connect with each other, thus addressing both connecting with an adult and between peers. (For the complete list of inputs in Coding Scheme 7, see Appendix O).

The primary researcher along with one other coder who was familiar with The Future Project program together mined all of the coded excerpts from research questions 1a, 1b, and 2a in student and alumni interviews and teacher survey open responses and assigned the number of the input or inputs that were whenever evidence of program.

3.6 Validity and Reliability

This section will discuss the validity and reliability of the study instruments, data collection processes, and the analysis approach for each research question.

3.6.1 RQ1a instrumentation and analysis. This section discusses the validity and reliability issues regarding the student interviews and Coding Scheme 1 (autonomy, competence, and relatedness) and Coding Scheme 2 (attribution of change in autonomy, competence, and relatedness to The Future Project).

3.6.1.1 Student interview instrumentation. The sole data source for research question 1a was student interviews. The interview protocol used had been previously designed by The Future Project research team as a semi-structured approach to elicit general impact of The Future Project from the students' perspectives. The researcher did not solicit any excerpts that were indicative of autonomy, competence, and relatedness. This both strengthens and weakens the validity of the findings. It is a weakness because not every interview provided direct robust evidence of the any level of autonomy, competence, and relatedness. It strengthens findings because relevant excerpts were a genuine reflection of the student experience, rather than a potentially fabricated response to a probing question.

3.6.1.2 Data collection. A number of aspects of the process of conducting student interviews compromised the results for this research question. These were all due to logistical constraints and not intentional design. First, the data set is very small, 19 individual student interviews from 5 schools out of the 9,000 student participants logged for 45 schools. Second, of the 19 student interviews, 9 were from one school, which further skews the results. Third, due to this being a secondary data analysis study, the primary researcher did not have access to students to conduct member checks. As a result of all of these, this sample set is too skewed and not large enough to validly draw generalizable conclusions.

3.6.1.3 Data Analysis. To answer this research question, student interviews were coded for levels of autonomy, competence, and relatedness using Coding Scheme 1, and for attribution of change in autonomy, competence, and relatedness to The Future Project using Coding Scheme 2.

Coding Scheme 1 was developed by adapting self-determination theory and a validated quantitative measurement tool to apply to qualitative data because there were no pre-existing qualitative measurement tools that could be applied to this data set for the purposes of answering this research questions, so. In order to maximize the validity of the findings a team of three coders were trained on Coding Scheme 1, and met multiple times to clarify application of the coding scheme to the data. “Collaborating on the coding process is said to enforce systematicity, clarity, and transparency...multiple coders also enable the assessment of inter-coder reliability statistics, where agreement between two or more coders is taken as evidence of the rigor of an analysis” (Flick, 2014, p. 81). Additionally, having multiple coders mitigates the risk of the biased perspective of the primary researcher (Cornish et al., 2007). Despite this process, interrater reliability was low (as reported in Section 3.5) due to the innovative nature of coding Scheme 1, the limited data with which to revise and hone it, and the limited time of the coding team. To mitigate the effect of low interrater the coding team reconvened to discuss and come to consensus on all codes.

Coding Scheme 2 presented a similar problem in its innovative nature. Little prior research existed on qualitative measurement participant change due to an intervention. This was true for all fields, and none existed for self-determination theory interventions specifically. Not surprisingly, despite training of coders as for Coding Schema 1, interrater reliability was low. Again, this was likely due to the insufficient time and data with which to iterate upon the scheme, therefore the coding team reconvened to discuss discrepant codes and come to consensus in order to maximize the validity of the findings.

3.6.2 RQ1b instrumentation and analysis. This section discusses the validity and reliability issues regarding the student interviews and Coding Scheme 1 (autonomy, competence, and relatedness) and Coding Scheme 2 (attribution of change in autonomy, competence, and relatedness to The Future Project).

3.6.2.1 Alumni Interview Instrumentation. The interview protocol for alumni was also semi-structured as for the student surveys, so again the responses were elicited rather than solicited, which led to greater variability but also can be considered a more genuine reflection of the alumni's experiences.

3.6.2.2 Data Collection. Another hindrance to the validity of drawing conclusions of The Future Project's impact on alumni is the inherent response bias of the alumni who agreed to participate in the interview process. Out of roughly one thousand alumni, only 16 were interviewed. These 16 were self-selected among the 75 who had contributed their contact information to The Future Project. As a result, this is not a representative sample. Member-checks were also not conducted due to the inability to establish contact with the alumni again at the time of this study.

3.6.2.3 Data Analysis. As with research question 1a, the analysis for 1b utilized Coding Schemes 1 and 2. See Section 3.6.1.3 for this discussion.

3.6.3 RQ2a instrumentation and analysis. This section discusses the validity and reliability issues regarding the teacher open response survey questions, administrator Likert-scale survey questions (student and alumni interviews are discussed in Sections 3.6.1 and 3.6.2), and Coding Schemes 3 (student self-reported academic motivation), 4 (student self-reported engagement), 5 (teacher perspectives on student academic motivation), and 6 (teacher perspectives on student academic engagement).

3.6.3.1 Teacher survey instrumentation. Since this was a secondary analysis study, the teacher open response questions were not designed to collect information relevant to motivation and engagement. This led to very little teacher data that was relevant to answering this research question. Two administrator survey questions asked directly about student attendance and engagement. They were not based on any psychometrically validated scales nor were the responses regarding attendance validated with

3.6.3.2 Data Collection. Teachers who responded to survey were self-selected and while the 137 respondents were fairly evenly distributed among all seven cities participating in The Future, they only constituted roughly 10% of all faculty in The Future Project schools. Administrators from 16 of the 45 schools completed the survey, so only approximately 30% of administrators were represented by this data. Additionally, their responses regarding student attendance were subjective and the former was not verified by the school databases due to lack of access to such information.

3.6.3.3 Data Analysis. A review of previous research on student self-reported academic motivation and engagement has revealed the shortcomings of relying on a single perspective to measure these constructs, even if the scales used are psychometrically validated (Fulmer & Frijters, 2009). Despite this recognition, there is still not a well-established, robust approach for measuring student motivation and engagement. Fulmer and Fritjers (2009) do recommend triangulating multiple perspectives when possible. Therefore, this study combines analysis of student interviews with teacher surveys, teacher interviews, and administrator surveys for a well-rounded 360 view of these outcomes to maximize the validity of the findings. All Coding

Schemes 3-6 were developed based on validated scales (referenced in Section 3.5 and Appendices I-N) for quantitative measurement and translated into qualitative coding approaches through a quantitative survey item to qualitative coding translation process used in previous research (Louick et al., 2016).

The coders were trained rigorously as was explained in Section 3.5. For Coding Schemes 3, the interrater reliability was acceptable, and the coders discussed and came to consensus on all discrepant codes. For Coding Scheme 4, student self-reported engagement, the interrater reliability was low likely due to the indirect evidence available in the data, which made it difficult to interpret for coding purposes, and insufficient data with which to iterate upon the coding scheme. The only pre-existing measurement methods for student engagement require observation or discussion of direct actions and interactions with school related tasks. These were not prompted explicitly in the interviews, so codable data was scant and indirect. Interrater reliability was not calculated for Coding Schemes 5 or 6 due to this sparseness of codable data. As a result, all coders met to come to consensus on each coded instance.

3.6.4 RQ2b coding and analysis. The analysis for this final research question simply involved looking for evidence of Future Project program inputs linked to the academic motivation and engagement coded thought units. Here the validity and reliability were also maximized with the use of multiple coders reaching consensus on the entire data set. Since this analysis was only specific to The Future Project, accuracy of mining the data for Future Project program inputs was maximized by ensuring that all coders had a rich understanding of program operations. Therefore, all coders on this team had volunteered with The Future Project in some capacity for at least one year at the time

of coding.

3.6.5 Positionality as a researcher. As a member of the research and evaluation team at The Future Project since 2015 and a volunteer since 2013, my positionality as a researcher is susceptible to internal biases towards success of The Future Project. This is mediated by the fact that this study is exploring the potential connection between The Future Project programming and academic motivation and engagement, which are not purported outcomes of The Future Project. This study is driven by my curiosity to explore the relationship between non-academic experiences and academic motivation. As an internal member of The Future Project organization I am able to conduct this research with a deep and rich contextual understanding of the work of this organization, which should enable me to more accurately interpret the data.

3.7 Summary

This chapter was intended to provide a comprehensive presentation of the research design, data, and analysis approach. In depth descriptions of each of these along with a discussion of their reliability and validity lay the foundation for the results to be presented in the next chapter.

Chapter 4: Results

4.1 Chapter Overview

This chapter presents the findings from the analysis of each of the four research questions as well as exemplar quotes to provide more rich illustration of the findings. The results are organized as follows:

- 4.2 presents the results for research question 1a summarizing how and to what extent The Future Project has an influence on student self-perceived autonomy, competence, and relatedness
- 4.3 presents the results for research question 1b summarizing how and to what extent The Future Project has an influence on alumni self-perceived autonomy, competence, and relatedness
- 4.4 presents the results for research question 2a summarizing whether The Future Project has made an impact on student academic motivation and engagement and alumni academic engagement.
- 4.5. presents results for research question 2b by connecting The Future Project's program inputs to the outcomes of autonomy, competence, relatedness, and academic motivation and engagement. These are contextualized with salient quotes to propose mechanistic themes relating non-academic program inputs with improved academic motivation and engagement.

4.2 Research Questions 1a: How do students perceive participation in The Future Project as supporting the psychological needs (autonomy, competence, relatedness) that are precursors of autonomous motivation for actively participating students?

Results for analysis of research question 1a show that for the 19 students interviewed there is a positive overall correlation between student autonomous motivation (the combined psychological needs of autonomy, competence, and relatedness) and attribution of changes in these psychological needs to The Future Project. Specific findings are reported in this section.

4.2.1 Student autonomy, competence, and relatedness. A summary of students' coded levels of autonomy, competence, and relatedness is shown in Figure 4. For autonomy, slightly more than half of students reported a level 3 indicating that their sense of autonomy transcended context. The large majority of students perceived their competence, and relatedness at a level 2, meaning they felt these needs being met but only in limited contexts.

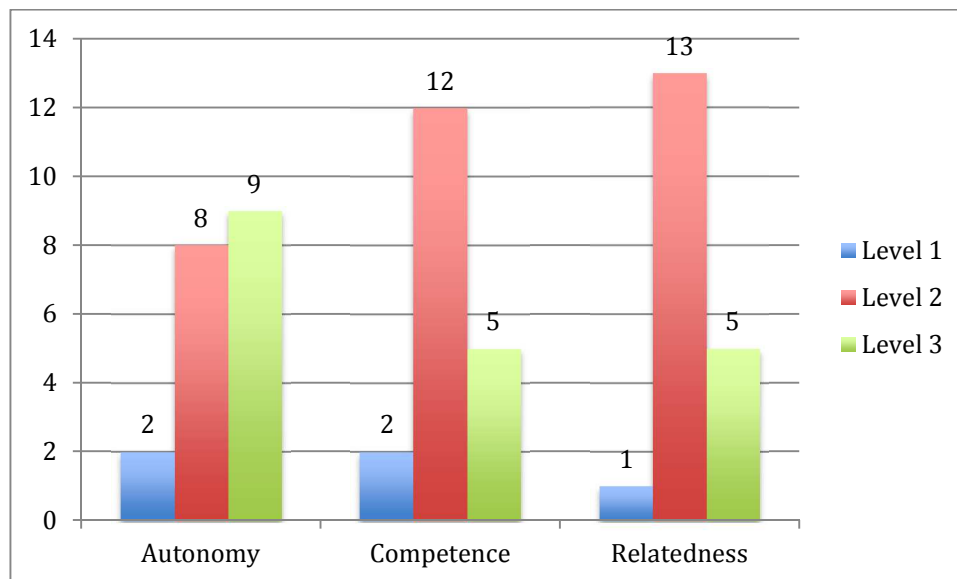


Figure 4: Distribution of student autonomy, competence, and relatedness.

4.2.2 Student autonomy, competence, and relatedness attributed to The

Future Project. Figure 5 below shows the distribution of coded levels of attribution of changes in autonomy, competence, and relatedness to The Future Project. Autonomy attribution was evenly split between level 2 and 3 attribution, and competence attribution was overwhelmingly a level 2, indicating most of those effects were felt either indirectly or as an enhancement of the sense of competence they were already developing. Relatedness by far was the strongest factor attributed to The Future Project. Two-thirds of students reported a level 3 attribution to The Future Project, meaning they experienced a direct and strong change in their ability to have trusting relationships with others.

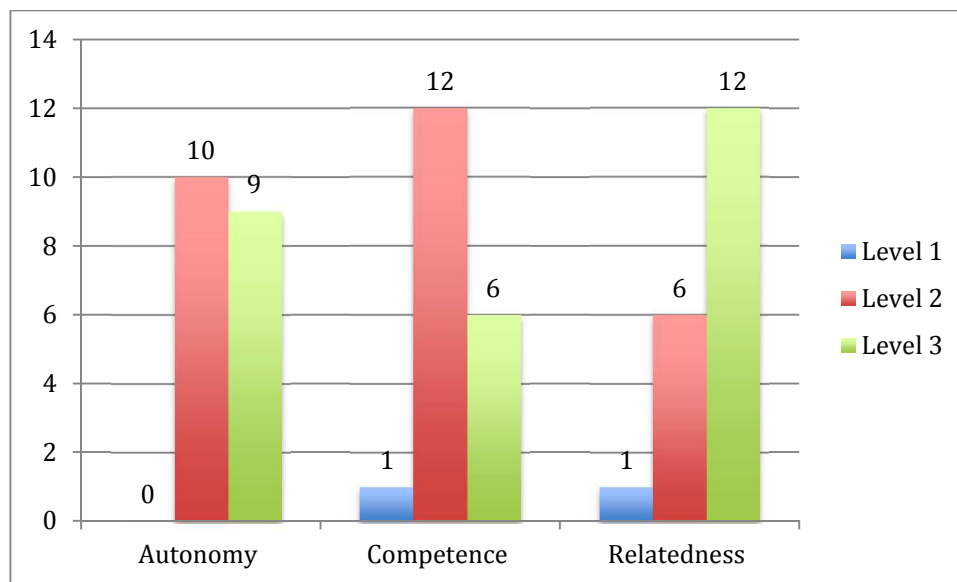


Figure 5: Distribution of students' attribution of change to The Future Project.

4.2.3 Relationship between student psychological needs and attribution to

The Future Project. The relationship between overall autonomous motivation and attribution of change in autonomous motivation to The Future Project is graphed in Figure 6. To generate these findings, each student's levels of autonomy, competence, and relatedness were averaged together to calculate a single overall autonomous

motivation level since according to self-determination theory, autonomy, competence, and relatedness combined are precursors to an overall sense of autonomous motivation (described in Chapter 2). The levels for attribution to The Future Project for autonomy, competence, and relatedness were also averaged and the relationship between these two averages for each student were plotted to generate Figure 6. There are five points because though there were nineteen students, the resulting averages of students' autonomous motivation and attribution to The Future Project only had five distinct combinations with multiple students having the same values (for example, the point of the graph with a 2 for average attribution and 2 for average autonomous motivation represents seven students). The results show an overall positive relationship between increasing attribution to The Future Project and increasing sense of autonomous motivation, however there is a plateau and even a slight dip above an attribution score of 2.33. These fluctuations are likely due to the small sample size analyzed and the unique experiences of each individual. These variations will be discussed in Section 4.5.

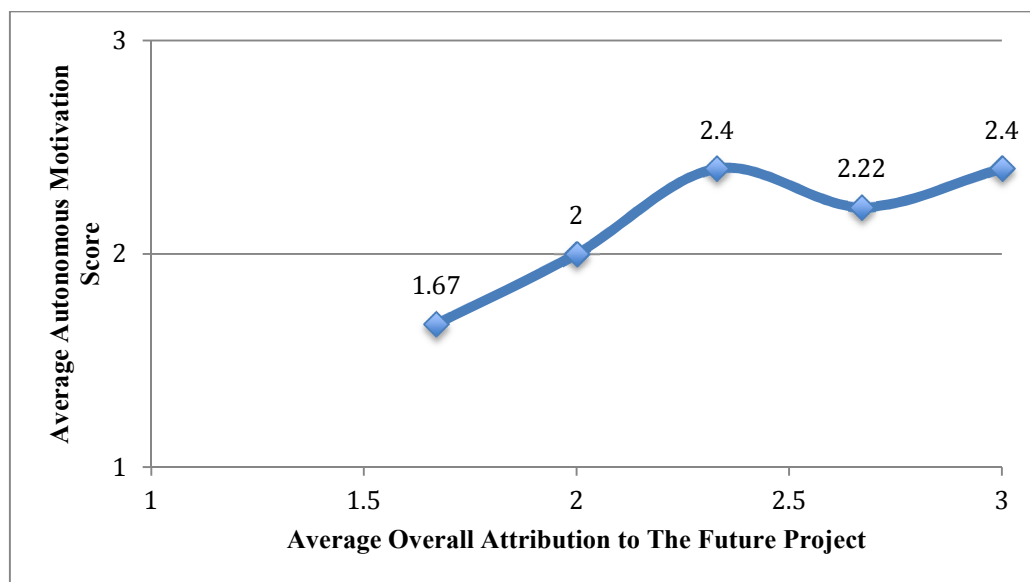


Figure 6: Attribution to The Future Project and overall student autonomous motivation.

This is evidence that those students who do have higher autonomy, competence, and relatedness do so as a result of The Future Project and not from other factors. As an example of how this relationship appeared in the data, below is a quote to illustrate high levels of each, autonomy and relatedness and high relatedness attribution to The Future Project.

I know my attitude has changed. From the beginning, I had like, I wouldn't really show it but I was just like, had a little attitude, but I'm like, it's better...I would say like anger...I think it's like because I have more people to express it to like I can talk to more people. Before I really didn't have anyone to talk to but now I have [Dream Director] and the Dream Team. (Student 16, School 1).

This quote above is an indication of high levels of autonomy and relatedness because it is an example of being one's own locus of control, in this case regarding emotions, and an ability to relate with others more effectively in all contexts. It also indicates a high level of attribution to The Future Project because the student indicated that they had changed significantly and attributed it directly to the Dream Director and the Dream Team. This quote is also an indication that influencing change in relatedness has an effect on students' sense of autonomy. (The interrelationship between the psychological needs is out of the scope of this study, but a preliminary exploration is included as Appendix P).

4.2.4 Summary. The analysis to answer research question 1a compared student levels of autonomy, competence, and relatedness (autonomous motivation) to changes in autonomy, competence, and relatedness that could be attributed to The Future Project in order to determine if The Future Project has a plausible influence on student autonomous motivation. The findings, summarized most succinctly in Figure 6, showed that overall The Future Project is associated with increased autonomous motivation. As indicated in

Figure 5, this is most likely due to The Future Project impact on relatedness more so than autonomy and competence.

4.3 Research Question 1b: How does participation in The Future Project continue to have an impact upon the self-perceived basic psychological needs (autonomy, competence, relatedness) that are precursors of autonomous motivation for program alumni?

Results for analysis of research question 1a show that for the 16 alumni interviewed there is no overall relationship between autonomous motivation and attribution of changes in these psychological needs to The Future Project. There does appear to be a ceiling effect, with all alumni exhibiting a moderately high or high autonomous motivation score. Specific findings are reported in this section.

Attribution to The Future Project was somewhat varied, but the overwhelming majority reported a strong (level 3) competence attribution to The Future Project. Competence consistently increased with all forms of attribution to The Future Project, but overall autonomous motivation showed no change with increasing attribution to The Future Project. Specific findings are reported in the following paragraphs.

4.3.1 Alumni autonomy, competence, and relatedness. Figure 7 presents the distribution of alumni scores of autonomy, competence, and relatedness. Overall the vast majority of alumni reported level 3 autonomy, and there was roughly a 50-50 distribution between levels 2 and 3 for competence and relatedness. None reported level 1 for any of the psychological needs. This shows that most alumni experience a strong sense of autonomy despite context, and that a little more than half experience context dependent

competence and relatedness.

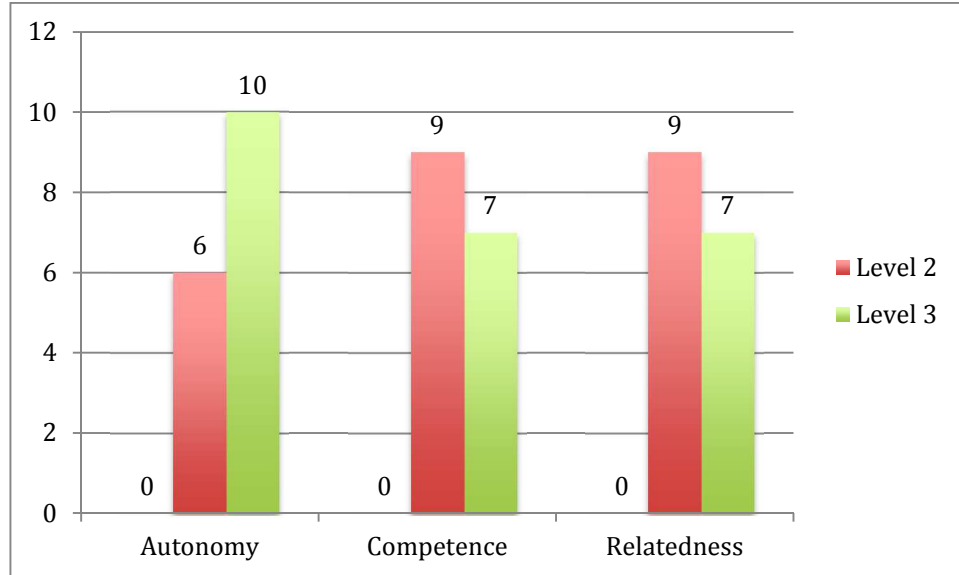


Figure 7: Distribution of alumni self-perceived autonomy, competence, and relatedness.

4.3.2 Alumni autonomy, competence, and relatedness attributed to The Future Project. Figure 8 below shows the distribution of coded levels of alumni attribution to The Future Project for changes in each of the three psychological needs.. Here roughly half of alumni reported a high level of attribution to The Future Project to explain changes in their sense of autonomy. The vast majority reported a high level of attribution of change for competence, and slightly more than half for relatedness.

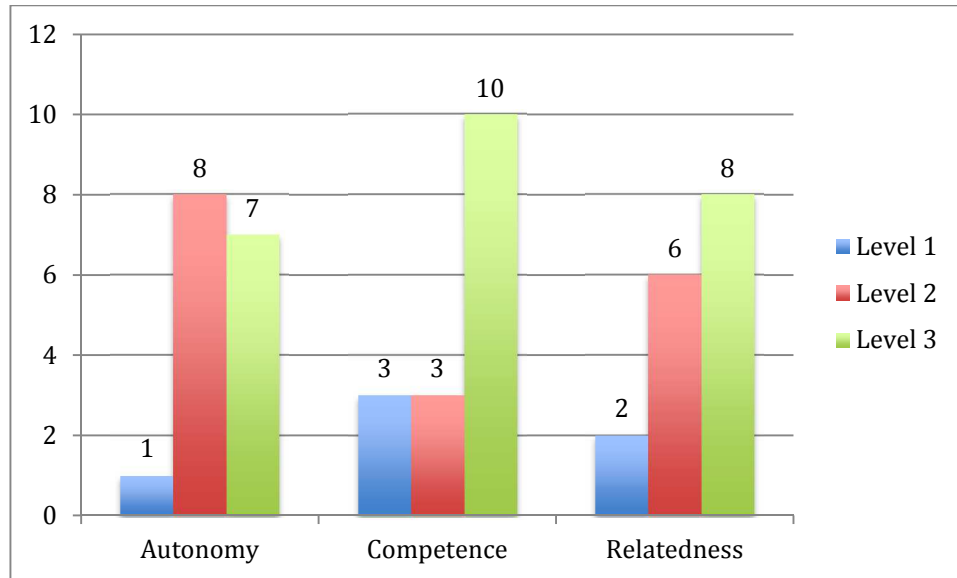


Figure 8: Distribution of alumni attribution of change to The Future Project.

4.3.3 Relationship between alumni psychological needs and attribution to The Future Project. Figure 9 graphs the relationship between overall autonomous motivation and attribution of change in autonomous motivation to The Future Project, as Figure 7 did for student data. Here there are six data points due to there being six distinct values once averages were calculated. The graph shows no overall positive or negative relationship between attribution to The Future Project and autonomous motivation. This is possibly due to a ceiling effect; all alumni had autonomous motivation averages between levels 2 and 3. Alumni with both the lowest and highest attribution to The Future Project had the highest autonomous motivation scores. There were fluctuations in the graph, which could reflect that the data set was so small, 16 alumni interviews, and individual variations strongly influenced averages.

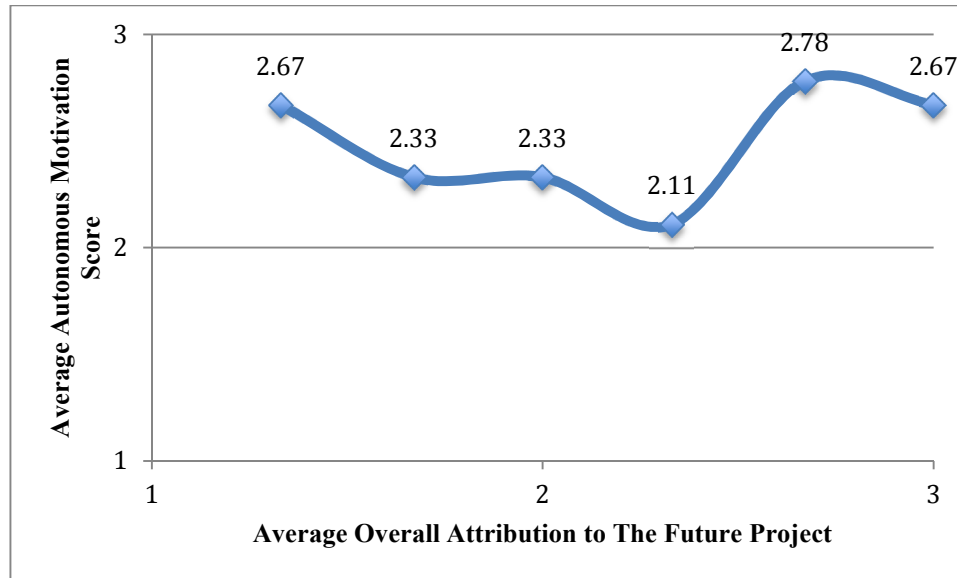


Figure 9: Attribution to The Future Project and overall alumni autonomous motivation.

The following is an example of how some students exhibited high autonomous motivation, in this case specifically relatedness, with no mention of The Future Project:

I think in relationships, friendship wise, I love the friends I already have but I'm not closed, shut down. I'm always willing to make a friend. I think having family around me who has taught me how to connect with people and how to have conversations and just be myself and everything helps me to make a new friend or meet people (Alum 10, School 7).

This is high relatedness because the alum mentions having close relationship and being able to create new trusting relationships, so it is therefore context independent. There is no attribution to The Future Project in this regard.

In contrast, Figure 8 had shown that the majority of alumni did have high attribution to The Future Project for changes in competence and relatedness. Since high attribution is not necessarily associated with high autonomous motivation according to Figure 9, the results in Figure 8 could reflect the fact that students perhaps had begun with low competence and relatedness and so participation in The Future Project provided

them with increased competence and relatedness but that was dependent upon The Future Project context. The following quote supports this conclusion:

my [future] project was successful in my high school. I think that was one of the greatest accomplishments for me because my project was surrounded by the word loss, and I felt like in senior year I lost a lot of things. To create a project that pretty much summed up how I was feeling helped me to have that open dialogue with my classmates and people around me...I was shocked with my event turnout. I only expected, literally, ten people to come. That's what I thought was going to happen, but over eighty people came. That was a huge accomplishment for me because I had the support of classmates who I thought we had a rift between one another (Alum 16, School 9).

In this example, the alum specifically references the project she did with The Future Project and how it helped her connect with classmates. This alum was scored as high (level 3) attribution for relatedness, but an overall level 2 for relatedness because she mentioned struggling with relationships outside of The Future Project context.

These two examples illustrate why there was a lack of an overall positive relationship between autonomous motivation and attribution to The Future Project indicated in Figure 9. Due to the lack of a clear trend, no succinct conclusion can be drawn regarding the effect of The Future Project on alumni autonomous motivation.

4.3.4 Summary. The analysis to answer research question 1b compared alumni levels of autonomy, competence, and relatedness (autonomous motivation) to changes in these that could be attributed to The Future Project in order to determine if The Future Project has a plausible influence on student autonomous motivation. The findings, presented in Figure 9, showed no association between The Future Project participation and increased autonomous motivation in alumni, though as indicated in Figure 8, the majority of alumni did attribute change in competence and relatedness to The Future Project even if these improvements were still context dependent.

4.4 Research Question 2a: How does participation in The Future Project influence academic motivation and engagement?

The main findings in the results for this research question show that student and alumni academic motivation was strong when the individual could identify how academics connected to their intrinsic goals and future selves. Of the students reporting solely extrinsic academic motivation it was from the support of their Dream Directors and fellow Dream Team members. Teachers did not report on student motivation. Student engagement reported from both students and teachers was largely evident through student participation in school based events or student projects developed with The Future Project. Teachers specifically noticed students' increased confidence and excitement at school. (The role of The Future Project in explaining these results will be primarily reserved for discussion in the results of research question 2b.)

4.4.1 Reporting from students and alumni. Findings from coding of student and alumni interviews show that nearly all students and alumni were academically motivated. By far, the alumni were more intrinsically than extrinsically motivated, whereas students still in high school were divided between extrinsic and intrinsic motivation. Alumni codes were 8%, 17%, and 75% for levels 1, 2, and 3 respectively. Student codes were 7%, 47%, and 47% for levels 1, 2, and 3 respectively. Student engagement was consistent across most students and schools, with behavioral engagement being universally present, and no evidence of cognitive engagement. For student overall engagement scores, 66% had one form of engagement, and 34% showed two forms of engagement. The remainder of this section presents quotes to further illustrate these overall findings.

4.4.1.1 Students exhibit moderately high motivation. Overall, student motivation coding results were nearly evenly split between level 2 (extrinsic) and level 3 (integrated extrinsic, but not intrinsic) academic motivation. Level 2 was most evident when students mentioned that the Dream Director or Dream Team pushed them to do well academically. Among the students who were coded for level 3 academic motivation, all exhibited integrated extrinsic reasoning for their motivation in noting the connection between pursuing larger goals and doing well academically. None indicated inherent intrinsic enjoyment of learning at school.

The following quotes exemplify the common reporting among those coded for level 2 academic motivation. This first illustrates the extrinsic support of the Dream Director:

Interviewer: Do you, can you tell me a little bit about how, like you were saying, one of the reasons that this [Future Project] was recommended was for academic reasons, and has it helped with your academics, has it changed, has it grown?

Student: ...it kind of helps,...It's positive being here, [the Dream Director] always tells me to stay on top of my work. Uhm, I feel like, yes I can do better, and I do have a lighter head than I had before, and I have done things that wouldn't be possible without [the Dream Director] or The Future Project (Student 15, School 5).

This second quote shows how the Dream Team members influence one another to work harder, also an example of extrinsic motivation:

Well I wasn't in that environment, but now I am, and everybody is trying to motivate each other and pushing each other. And if anyone is slacking off we'll tell each other, "C'mon, you gotta pick up the pace. You gotta get on your work." It's like we're family, like brothers and sisters and aunts and uncles – it's family (Student 9, School 2).

For students coded at a level 3 motivation it was always in the form of students

identifying a personal life goal and saw how doing well in school was important for pursuing the goal, even if the goal itself was not academic. The following quotes represent this:

*Sometimes I be getting distracted if my teacher tells me to do my work I'll finish it. I'll be more focused now because I got to reach my goals
(Student 12, School 1)*

Interviewer: Uh huh. Do you see doing well in school as part of your goal of getting to the NFL because you need to go to college first right... Were you always inspired to work hard in school for that reason, or is that something you more recently thought about?

Student: More recently like I would say like seventh grade, yeah, cause that's when I first started playing football, and before that I would say, mmm there was nothing really to motivate me to go to school (Student 16, School 1).

It is key to note that these are examples of integrated extrinsic motivation in that their discussion of being inspired to do well in school as part of their goals for the future. The Future Project was not explicitly mentioned directly within many of the quotes coded for motivation, but the role of The Future Project in helping students identify and pursue the goals that inspired students to succeed academically is apparent throughout the student transcripts and will be discussed in Section 4.5 for research question 2b.

4.4.1.2 Students exhibit consistent behavioral engagement and occasional affective engagement. Nearly all students reported at least one example of behavioral engagement. Roughly half showed evidence of affective engagement, and none discussed anything that could be coded for cognitive engagement. The coded instances were not necessarily reflective of involvement with The Future Project.

The one behavioral engagement code that was consistently applied to student data

was “I try hard to do well in school.” The following student quotes represent this:

And I've kept honors since 8th grade except for sophomore year when I got a C. But now if I get like a B or a 79 it hurts so bad. Really bad (Student 6, School 2).

Interviewer: Cool, yeah, so do you notice that you're, like do you feel more focused in school or that you're doing better?

Student: Definitely! Yes! My grades are good (Student 1, School 1).

In both of these instances the students indicate that they were earning good grades, which is an indication that they work hard in school. These quotes do not directly indicate any influence by The Future Project because most of the coded examples of student behavioral engagement did not involve direct discussion of The Future Project.

Of the affective engagement codes, the only item that was coded for multiple students was “I am very interested in learning.” The coders did not discern whether this interest was due to intrinsic or integrated extrinsic interest in learning. A student quote that exemplifies this is included here below:

Yeah. I already know what college I want to go to. I have three choices, but they're like high, like...Yeah. So I'm trying to do my best in the academics I'm really good at, which is math. I feel like the majors I want to study in, they involve a lot of math so if I do good in that then they might see potential in me and want to accept me (Student 5, School 1).

Here the student clearly indicated her interest in learning math. Notably, this form of engagement is inspired by having a long-term goal, is consistent with the integrated extrinsic motivation findings. Here again, The Future Project was not explicitly mentioned directly within many of the quotes coded for affective engagement, though it was apparent throughout the entirety of each interview transcript that The Future Project did influence students' ability to identify and prioritize these goals. This connection will

be discussed in Section 4.5 for research question 2b.

4.4.1.3 Alumni are highly academically motivated. From the academic motivation coding for alumni, three-fourths of alumni were designated level 3, and as with students, this was in the form of integrated extrinsic motivation rather than intrinsic enjoyment of learning. The alumni also discussed having had goals they were excited about that doing well academically would help them attain. The following quotes are representative of this theme:

I'm getting ready to go back to school, second year at Western Michigan. I'm studying aviation flight finance. I want to be a pilot, so I'm really excited about that...Yeah. I started taking school a lot more serious. With college I'm just going all in. I'm not taking anything for granted. I'm in a couple different organizations with my internship, I'm all in. Just trying to learn any and everything I can and make as many contacts I can for the future (Alum 4, School 8).

I feel the most excited about school and where my education is going to take me and I know that I have really big dreams and coming from The Future Project knowing that my dreams can take me anywhere and I can do anything I put my mind to. I'm really excited about all the different places my education can take me (Alum 14, School 7).

These are examples of integrated extrinsic motivation in their discussion of being inspired to do well in school as part of their goals for the future. These are indicative of alumni positive attitudes towards education connecting their learning to personal goals even more so at the post-secondary level.

4.4.2 Teacher and administrator reporting. This section presents teacher and principal survey results. Eighteen percent of teachers reported improved student academic motivation because of The Future Project; this came in the form of students seeing the connection between school and their future selves. Thirty-two percent of teachers reported improved student engagement by noting students' increased confidence

and joy in the school setting. Sixty percent of administrators saw an increase in student attendance due to The Future Project. Ninety-seven percent of administrators reported that The Future Project had a positive influence on student engagement. More specifically, 20% reported that a small number of students were more engaged; 76% reported that a substantial number of students were more engaged.

4.4.2.1 Some teachers report evidence of improved motivation and engagement.

Out of the hundreds of completed teacher surveys, only a small percentage reported a change in student motivation and engagement as a result of working with The Future Project. Eighteen percent of teachers' responses indicated having seen an increase in students' motivation as a result of participation in The Future Project. Four of the codes on teacher perspective of student motivation appeared most frequently in the data: *"If TFP students are motivated to learn in my class, it is often because they have aspirations that connect to education, like plans to go on to college;" "TFP students are engaged in my class because they see the relevance of the content in their world;" "TFP students are motivated to work in school because they see how education has a place in the futures they see for themselves;"* and *"TFP students generally do class-related tasks and assignments willingly."*

The first three items are all similar in that they involve students connecting their academic lives with their futures as a result of The Future Project. The following is a teacher's quote illustrating this common response:

Our Dream Director gave the young men opportunities to see the outside of the school walls as part of their education. It helped them to visualize future possibilities in setting goals. All field trips and visits were positive for our young men. They had the opportunity to see other young people being successful in their roles. It encourages our young men to be better (Teacher 98, School 20).

Here the teacher noted how students, because of The Future Project, were able to envision their futures. While the teacher did not indicate how this translated into their classroom motivation, the teacher had taken notice.

The other indicator of increased student motivation according to teachers was students' willingness to do class-related tasks. The following teacher quote reveals this:

Students feel more empowered and motivated to affect change independently after working with [Dream Director]. As a teacher, motivating students is the most difficult thing. The way [Dream Director] supports students to see themselves as a necessary and vital agents of change allows students to take this mentality and these strategies into other parts of school, as well as other parts of their life, creating change in a variety of ways (Teacher 28, School 4).

Here the teacher noted students' had become motivated to take initiative after working with the Dream Director, and noted how that showed up in all areas of students' lives. While the teacher did not explicitly relate this to the in-class experience, the teacher had seen this change occur.

In terms of engagement, teachers reported students' affective engagement largely evidenced by increased student excitement and confidence and self-motivation regarding the school setting as a whole, not necessarily classroom learning. Teachers reported improved behavioral engagement in the form of the projects students participated in and the leadership roles they assumed in the school community, again not necessarily in the classroom. Lastly, teachers reported improved cognitive engagement in students due to The Future Project as evidenced by their improved focus in the classroom. There were five teachers from two schools who reported that students were more inclined to skip class to work on their projects. The following quote is a succinct example of a teacher's perspective on both student affective and behavioral engagement:

Students became more involved in school wide activities, open mics, assemblies, talent shows, and advisory. Positive-students felt more expressive and confident (Teacher 3, School 21).

Here affective engagement was in the form of student confidence. Behavioral engagement was apparent in students' participation in school-based activities. Cognitive engagement was so rarely cited that an example is not included here.

4.4.2.2 Most administrators believe student engagement and attendance improved. According to the results from the administrator multiple choice survey responses regarding changes in student engagement, the most commonly chosen response, by 43% of administrators, was “a substantial number of students are more engaged.” This was followed by 33% of administrators choosing the highest possible option, “a substantial number of students are much more engaged.” Twenty percent answered “a small group of students are much more engaged” and 3% said “a small group of students are more engaged.” No administrators chose “student engagement hasn't changed,” “students are less engaged,” or “students are much less engaged.”

The majority of administrator responded positively to the survey question regarding student attendance. Fifty percent of administrators reported “attendance is better because of The Future Project,” and 10% said ‘attendance is much better because of The Future Project.’ Forty percent reported “attendance hasn't changed because of The Future Project.”

4.4.3 Summary and triangulation of data. In summary, student, alumni, and teacher data were consistent in noting that academic motivation was strong when the student could identify how academics connected to their intrinsic goals and future selves. Student reporting pointed to Dream Directors and fellow Dream Team members as extrinsic motivators, but teachers did not report this. Student engagement reported from both students and teachers was largely evident through student participation in school

based events or student projects developed with The Future Project. Teachers specifically noticed students' increased confidence and excitement at school. While principal data was limited to Likert-scale survey responses with no contextualization, overall they did report increased student engagement and attendance.

The following quote of an alum reflecting back on her experience with The Future Project summarizes the above findings for research question 2a, how participating in The Future Project influences student academic motivation and engagement:

It was about my project and going through the steps of planning an event for it I think made me become more interested in school because I was actually creating something to help other people... Writing down how I envision my event to look like, who I want to be there, what do I want to happen during that event, it made me more interested in school like, "Okay, I need to come to school if I want to have my meeting. I have to go to school if I want to get this approved." Those were motivation factors for me (Alum 16, School 9).

This shows how the student experience of building a personal project (intrinsic goal) at school with others (behavioral engagement) made her excited to come to school more (affective engagement, attendance) and made her “more interested in school” (motivation). This connection between student experience with The Future Project and academic motivation, engagement, as well as the roles of autonomy, competence, and relatedness are pursued further in the next Section 4.5 reporting the results for research question 2b.

4.5 Research Question 2b: What is the nature of the relationship between autonomous motivation, or general intrinsic motivation, attributed to participation in The Future Project and student self reported academic motivation and

engagement?

Answering this final research question involves connecting the results of the previous research questions to one another and to The Future Project program inputs (see Figures 1 and 2, Table 2, and Appendix O) to explore the relationship between The Future Project programming, student autonomy, competence, relatedness, and student academic motivation and engagement.

Results from this process show two likely mechanisms that explain how The Future Project, a non-academic program, positively influenced student motivation and engagement: (1) increasing students' sense of relatedness through connecting with an adult (the Dream Director) in the school context, and (2) increasing students' sense of relatedness through connecting peers (the Dream Team) in the school context. This relatedness is based around collaborative experiences that help students identify their intrinsic life goals and build the agency (autonomy) and skills (competence) related to these goals. Having identified intrinsic life goals in turn inspires students to attend school and work harder academically in pursuit of these goals, even if the goals themselves are non-academic.

4.5.1 Relationship between autonomous motivation and academic motivation.

Figures 10 and 11 plot the average autonomous motivation scores for the 19 students and 16 alumni respectively against their academic motivation scores. (There are only five points in Figure 10 due to there being only five distinct autonomous motivation averages for students. There are four points in Figure 11 because there were only four distinct autonomous motivation averages for alumni). All academic motivation scores associated with a given autonomous motivation score were then grouped and averaged. This same

explanation applies to the four points plotted in Figure 11).

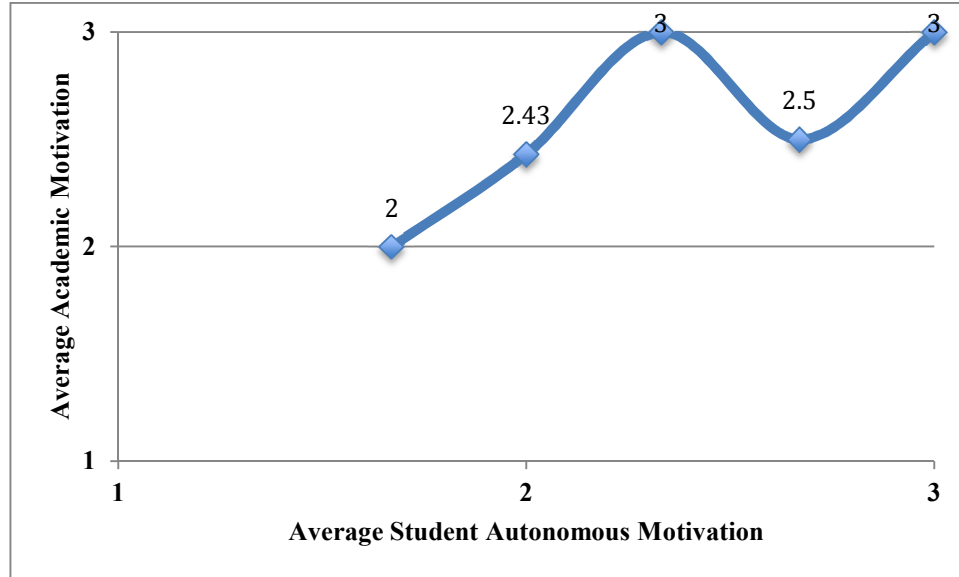


Figure 10: Student autonomous motivation and academic motivation.

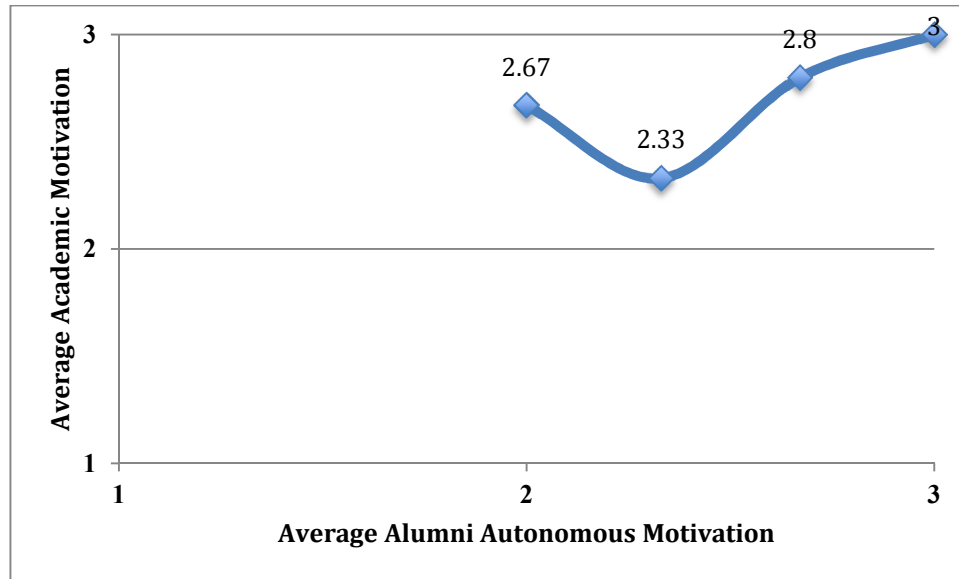


Figure 11: Alumni autonomous motivation and academic motivation.

These both show a clear positive relationship between increasing autonomous motivation and increasing academic motivation among students, though there are fluctuations in both Figures 10 and 11. The dips in Figures 10 and 11 when student autonomous motivation were 2.5 and 2.33 respectively were likely due to the small sample sets used so therefore

individual differences had an influence even after averages were calculated and grouped together. This indicates the wide variety of student experiences. Overall, these graphs imply there is likely an increase in student academic motivation when there is an increase in autonomous motivation for students participating in The Future Project. This does not imply, however, that The Future Project is a source of such relationship. That is addressed in the following section 4.5.1.2. These current results help to show the validity of the analysis process used for this study, since these findings are consistent with previous literature that has shown a positive relationship between autonomous motivation and academic motivation (Connell et al., 1995; Eisenman, 2007).

The example quotes here are used to illustrate the simple relationship between autonomy, competence, and relatedness with academic motivation regardless of mention of The Future Project. This first excerpt, here below, shows how autonomy and competence connect with increased academic motivation:

the goals I've set in mind and stuff like that and I can actually take action upon it, it changes the way I think of things and the way I do things cuz, say for example I want to do modeling or track and stuff like that, that requires for me to actually like do good academic-wise and stuff like that and make sure I'm physically fit especially for those type of things and stuff like that, so it just changes like the things that I do and like the time I spent on doing certain things...Instead of being on the phone, I actually spend more time working out or just taking a run or something just to prepare myself physically and to prepare myself mentally (Student 1, School 1)

Coded instances connecting relatedness and academic motivation to The Future Project will be presented in the next section concerning the relationship between attribution to The Future Project and academic motivation.

4.5.1.2 Attribution to The Future Project has a small effect on student motivation. Figures 12 and 13 show the relationship between attribution of autonomous

motivation to The Future Project with student and alumni academic motivation respectively. For students, there is a small positive relationship between attribution and motivation for students, as shown in Figure 12 by the overall increase in student academic motivation as attribution to The Future Project increases. There is no clear trend for alumni, though there appears to be a ceiling effect, as shown in Figure 13. Many alumni scored a 3 for academic motivation regardless of level of attribution to The Future Project.

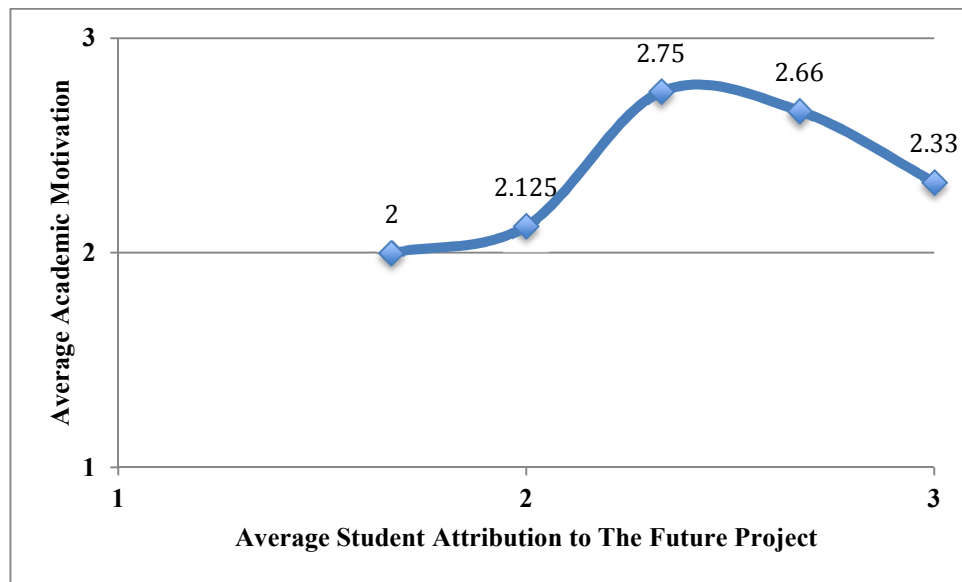


Figure 12: Attribution to The Future Project and student academic motivation.

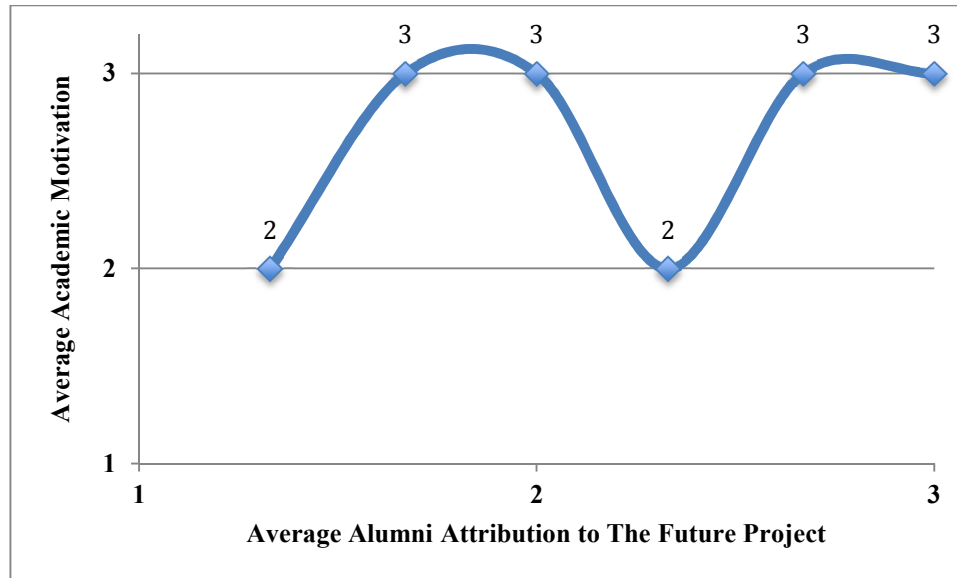


Figure 13: Attribution to The Future Project and alumni academic motivation.

The following quote is an example of how participation in The Future Project influences sense of relatedness and then autonomy in terms of the ability to regulate emotions, to make positive choices, and take action around goals.

Interviewer: Do you feel like you've changed in other ways?

Student: My anger because I used to have very bad anger issues, but then that's how [Dream Director], and not just [Dream Director] but the whole dream team, they support me if I have a problem. They're going to try and help me solve it without using violence. I got to understand I don't need to be violent and not everything's got to be all serious and end up like that. There's more ways to go about things...now I'm just excited about my future because I know I'm going to do things and just imagine the things I will do and could do now to make it happen...Yeah, I want to well I'm going to go to college. I want to be a marine biologist and a veterinarian, so yeah. (Student 8, School 3)

The quote above also shows how by supporting relatedness and autonomy, this student focused more clearly on academics and getting into college to pursue his intrinsic goals.

The following quote illustrates how relatedness and competence attribution to The

Future Project can increase academic motivation;

I've been getting things done lately, and she [Dream Director] gives us positive reinforcement about what we should do...Well it's everything. She's there for us. My classes are better cuz my 10th grade year I didn't go and I was messing up. My 9th grade year was not so good, but then when I came here and met her, she was strict but she wasn't mean. She had an understanding of us...It made me believe I could do better because I had doubts about myself (Student 8, School 3)

Here, the student experiences relatedness through support from the Dream Director, and an increased sense of competence as evidenced by believing they could do better in school. This in turn changed how motivated the student was to show up and do well in school.

4.5.2 The Future Project Program Inputs and Mechanistic Themes. This section presents findings regarding which of the 16 Future Project program inputs were associated with the outcomes of autonomy, competence, relatedness, and academic motivation and engagement. Consistent with the emergent themes in 4.5.1, this systematic approach at identifying which aspects of The Future Project program shows that connecting with an adult in school, peer bonding, and identifying intrinsic goals are the most commonly cited reasoning explaining increases in autonomy, competence, relatedness, and academic motivation and engagement. Quotes from students, alumni, and teachers as well as in-depth case studies of Schools 1 and 4 are included in this section to richly illustrate these connections.

4.5.2.1 Program inputs and autonomy, competence, and relatedness. According to Table 6, below, the top inputs for students and alumni in all three autonomy, competence, and relatedness were *4. Connecting with an adult in the school, 8. Identifying intrinsic goals, 11. Building social emotional skills, and 13. Peer bonding.*

Specifically for increased autonomy students expressed 3. *Help perceiving difficult tasks as challenges, but not impossible*, and alumni reported 16. *Student-led, mentor (DD)* facilitated opportunities. In terms of improving competence, students frequently cited 14. *Peer collaboration* on projects intended to positively influence the school community.

Table 6
Program inputs associated with student and alumni autonomy, competence, and relatedness

Program Input	Autonomy Students (Alumni)	Competence Students (Alumni)	Relatedness Students (Alumni)	Totals
1. Extracurricular work that promotes autonomy and competence	2 (5)	9 (4)	- (2)	22
4. Connecting with an adult in the school	6 (5)	9 (1)	9 (9)	39
8. Identifying intrinsic goals	10 (5)	6 (3)	2 (-)	26
11. Building social and emotional skills	8 (7)	2 (4)	9 (3)	33
12. Students participate for 9 months or longer	- (-)	- (-)	- (-)	-
13. Peer bonding	7 (2)	3 (-)	12 (7)	31

The following quotes illustrate the top inputs and how they affect autonomy, competence, and relatedness. Often times the same excerpt could be quoted for multiple inputs; this first quote combines 4. *Connecting with and adult in school*, and 8.

Identifying intrinsic goals:

In all reality, it helped me know what paths exactly I wanted to go and what career I wanted to pursue while in college. I got to give all thanks to [Dream Director] for all of that. He helped me get into a production program in high school with [inaudible 00:03:09] news network. From there, I branched out and started doing my own work as a producer and produced a couple of videos and helped them out with production [inaudible 00:03:23] for other videos as well...However, that one specifically has made me who I am, because it allowed me to change my major and stay on something that I love a lot. Do something for three years and then one day just figure out, "Oh, wait. This is not what I want to do all my life," basically. (Alum 6, School, 9)

This shows how with the Dream Director's support this former student was able to

recognize and develop his/her own interest and skills which builds competence, and increased his/her confidence to make choices to pursue new outlets for exercising and developing these skills, which exhibits greater autonomy.

This next quote shows 8. *Identifying intrinsic goals*, and 11. *Building social emotional skills*. These resulted in greater autonomy in the form of emotional self-regulation and commitment to the pursuit of one's chosen goals:

It takes a lot for a person to grow personally like internally and maturity wise and The Future Project helped me. I went from not caring about much of anything to helping everybody else with what they want to accomplish while also trying to accomplish working to accomplish my goals. I mean it's all about growth. I think that every goal you set, there's a new you needed, a higher version of you. You got constantly grow to get there. (Alum 4, School 8)

An example of 13. Peer bonding:

Interviewer: What if you had not joined the DT? What do you think would be different?

Student: But I probably wouldn't be associated with some of the people I am now. I would probably still be staying by myself, not really talking to anybody, doing what I got to do and then just leave. But here I'm more socially active...From going through what we have been through so far, I feel comfortable helping other people. Now it seems like that it's such a positive environment people look at me with respect. They see how genuine I am instead of seeing I'm upset or angry. (Student 19, School 2)

Here the peer bonding is evident in this student's recounting of how he/she is became more inclined to interact with peers in positive, helpful ways whereas before he/she was withdrawn, upset, and angry.

4.5.2.2 Program inputs and academic motivation and engagement. As shown in Table 7, the only standout input associated with student motivation reported by student interviews was 6. *Connecting student goals to school*. The only strong input reported by

alumni was 8. *Identifying intrinsic goals*. This was also reported frequently in the teacher survey responses. The top inputs reported by teachers in order of decreasing frequency are: 9. *Provide opportunities to engage with the community*, 3. *Help perceiving difficult tasks as challenges, but not impossible*, 4. *Connecting with an adult in the school*, 1. *Extracurricular work that promotes autonomy and competence*, 6. *Connecting student goals to school*, and 8. *Identifying intrinsic goals*.

Table 7
Number of coded instances of program inputs associated with academic motivation

Program Input	Motivation			Totals
	Student reported	Alumni reported	Teacher reported	
3. Help perceiving difficult tasks as challenges, but not impossible	3	1	7	11
4. Connecting with an adult in the school	3	-	7	10
6. Connecting student goals to school	6	2	6	14
8. Identifying intrinsic goals	2	5	6	13

The following is a student quote illustrating the connection between input 6.

Connecting student goals to school, and academic motivation.

I'm just excited about my future because I know I'm going to do things and just imagine the things I will do and could do now to make it happen...Yeah, I want to well I'm going to go to college. I want to be a marine biologist and a veterinarian, so yeah. (Student 3, School 3)

Similarly, alumni most cited 8. *Identifying intrinsic goals*, as key to sustained academic motivation. This is shown in the following quote:

I remember thinking like on the first day that I started to become involved with The Future Project how since that day, it made me want to go to school like a thousand times more...I wanted to stay all the time. I felt like for once like it wasn't just me going to school to like see my friends, go to class, and like try and learn something. It was me going to school for a reason. It made me so, so happy and proud of myself to go to school, because I felt like I was doing something that I really cared about and I genuinely loved it. In the college classes that I was taking, sometimes I

would talk about you know, The Future Project, my project, and things like that. I integrated it in my college, and now here I am almost done with college. (Alum 9, School 10)

The following teacher response is an example of the most frequently cited input that teachers cited as having an impact on student motivation, 9. *Provide opportunities to engage with the community.*

Our Dream Director taught our students how to write grants for independent and school based projects. As a current Art Teacher he also made student body experience memorable by bringing in speakers that talked about career goals and making positive life choices. He is an essential part of our school community. He added great experiences to the Art class by bringing in an Teaching Artist to teach about NYC murals and social issue themes. We also worked with other programs that encouraged students to think about values and life choices. (Teacher 28, School 23)

Table 8 reveals that there were very few program inputs associated with coded instances of engagement. The two inputs most frequently cited were regarding behavioral engagement: 4. *Connecting with an adult in school*, and 6. *Connecting student goals to school*. Others cited by multiple sources include, 1. *Extracurricular work that promotes autonomy and competence*, 3. *Help perceiving difficult tasks as challenges, but not impossible*, 13. *Peer bonding*, and 15. *Students proactively working with teachers and administrators on student led school improvement plans*.

Table 8
Program inputs associated with student engagement

Program Input	Affective	Behavioral	Cognitive	Totals
	Students (Teachers)	Students (Teachers)	Students (Teachers)	
1. Extracurricular work that promotes autonomy and competence	- (2)	- (1)	- (1)	4
3. Help perceiving difficult tasks as challenges, but not impossible	- (-)	4 (-)	- (-)	4
4. Connecting with an adult in the school	- (2)	3 (3)	- (-)	8
6. Connecting student goals to school	- (-)	6 (-)	- (-)	6
13. Peer bonding	- (1)	1 (-)	- (1)	4
15. Students proactively working with teachers and administrators on student led school improvement plans	1 (-)	1 (2)	- (1)	5

The following teacher quote discusses most of these top inputs:

[The Dream Director] is amazing! He has a great relationship with students and has worked on numerous projects that have improved the climate of our school, including but not limited to the Glow in the Dark Dance, Talent Show, First Day Fresh, Black History Month assembly, Family Night and pep rallies. "Cross Pride is on the Rise" and [the Dream Director]'s work continues to foster a sense of community at Wilbur Cross. Students are self-motivated and engaged when working with the Future Project because their projects are meaningful to them. [The Dream Director] has become a mentor and role model to so many Cross students, helping them not only to fulfill their "dreams", but to learn that perseverance and hard work pay off. [The Dream Director] also connects our school to outside organizations that can assist with our goals and objectives. This year twelve males of color will receive a scholarship, laptop computer, and mentor for their college years based on a partnership that [Dream Director] pursued (Teacher 58, School 29).

This quote perfectly captures a teacher's perspective on how the Dream Director built relationships with the students while providing opportunities for them to experience autonomy and competence as they lead projects that influence their school climate. The teacher also noted how the Dream Director helped the students to see the possibility in what was once viewed as impossible by pushing them through experiences where hard work pays off, by serving as a role model, and providing opportunities for underserved students.

Two additional findings from teacher responses elucidating the connection between The Future Project and academic motivation and engagement are worth noting. The first is reporting of negative impact. Teachers from several schools mentioned students missing class in order to work on their projects. The second provides more granular insight into how and why input 4. *Connecting with an adult in the school*, was so effective. Many of the Dream Directors can serve as genuine role models because they are of a similar background and demographic as their students.

4.5.2.3 Summary of relational findings between program inputs and outcomes.

There were four inputs that consistently appeared for students, and alumni for autonomy, competence, and relatedness. These were: 4. *Connecting with an adult in the school* (which proved particularly impactful if the Dream Director shared a similar demographic background with the students), 8. *Identifying intrinsic goals*, 11. *Building social and emotional skills*, and 13. *Peer bonding*.

Similarly in connecting inputs with academic motivation and engagement, students, alumni, and teachers all reported that *6. Connecting student goals to school*, and *8. Identifying intrinsic goals* had the biggest influence on student motivation and engagement, though in some schools this enthusiasm to work on self-identified goals proved to detract from students' desire to attend class.

All of the top inputs, except peer bonding, fall within the main category of one-on-one coaching (Figure 2, Appendix O). This indicates that the primary means that The Future Project influences student academic motivation and engagement is through the one-on-one coaching, or adult mentorship, where the Dream Director and student discuss how to identify the students' intrinsic goals and connect them to school resulting in integrated extrinsic motivation to do well academically.

4.5.3 Case study portraits to illustrate possible mechanisms of change. The previous Section 4.5.2 summarized the most common program inputs associated with changes in autonomy, competence, relatedness, and academic motivation and engagement. This section is intended to provide more vivid detail as to how these inputs were connected to the outcomes. The data presented here is limited to Schools 1 and 4 since they are the only schools with in-depth student interviews and teacher data and administrator survey data and can therefore provide a more holistic view in each of these schools.

4.5.3.1 School 1. School 1 is a charter school in an urban east coast city. It has grades 5-9 and so is the only school where the Dream Director worked only with 9th grade students. Most others concentrated on sophomores through seniors. It is also the only charter school and had a total enrollment of 465 students. This was the first year of

having a Dream Director. The principal survey reported that attendance was much better and a substantial number of students were much more engaged because of The Future Project. A wide range of program inputs, over half of the sixteen listed, were coded for at least one of the outcomes at School 1. The top inputs however were consistent with the larger data set: connecting with the dream director, peer bonding, and identifying intrinsic goals.

Figure 14 provides a visual overview of the data analysis on motivation and engagement from School 1.

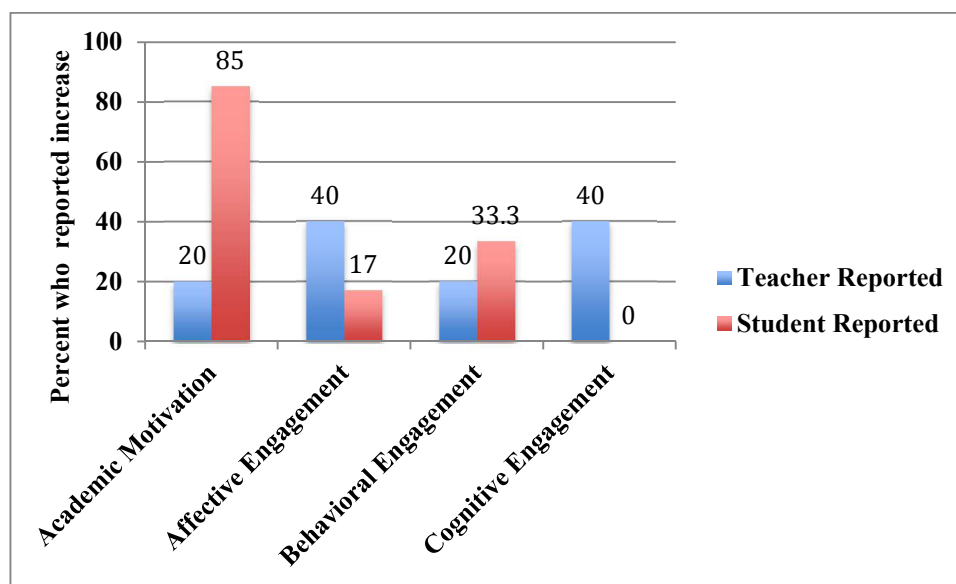


Figure 14: Student academic motivation and engagement for School 1.

As shown in Figure 14, student data provided strong and consistent evidence of high student motivation, with 85% of students coded at level 3 for motivation. Only 17% indicated increased affective engagement, 33.3% increased in behavioral engagement, and there was no indication of cognitive engagement. Teacher reporting, by contrast, provided little evidence of student motivation, and was only slightly more indicative of

all three forms of engagement (20% reporting increased motivation; and 40%, 20%, and 40% for increased affective, behavioral, and cognitive engagement respectively). The remainder of this section will illustrate and discuss these findings in detail.

The following quotes illustrate how, when there was a reported increase in motivation and engagement, students connected the main inputs from participating in The Future Project with that change. Through Dream Director and Dream Team support, students were exposed to new opportunities, further solidified their personal goals, and gained the confidence to take action around the goals they set for themselves, therefore seeing what they previously thought to be impossible as possible. This led to developing relevant skills as well as seeing the connection between doing well in school and reaching their goals.

Most I'm excited about is my talents and how Dream Team it drives me find ways to pursue my talents, to pursue my dreams of becoming a singer...So they push me to get my ideas of how I could get there...I used to have a whole attitude. Everything used to make me mad. Every little thing you did – like push me or something – used to make me mad. I used to be a big fighter...But now this year, it's like I'm a better person. It's because I knew I wanted to become a singer, and if I'm getting into fights Julliard is not going to want me. (Student, 7, School 1)

The quote above shows how peer bonding with the Dream Team (relatedness) helped this student identify a goal and develop her talents (competence) that in turn inspired her to control her anger (autonomy and affective engagement) and get into fewer fights (behavioral engagement). This next quote indicates a similar experience around the value of identifying and pursuing an intrinsic goal:

Well now knowing that, like, with like the goals I've set in mind and stuff like that and I can actually take action upon it, it changes the way I think of things and the way I do things cuz, say for example I want to do modeling or track and stuff like that, that requires for me to actually like

do good academic-wise and stuff like that... I never actually took the initiative before this, before The Future Project came into play and stuff because just I never thought I was able to do it. It's just, I kept doubting myself because I didn't know where to start (Student 1, School 1)

Here again the student discussed being inspired by an intrinsic goal that The Future Project helped him identify and pursue. Unlike the previous quote, there is not evidence of bonding with the Dream Director or Dream Team. The student mentions now taking more initiative (autonomy, affective and behavioral engagement) and focusing on academic achievement in order to pursue his intrinsic goal (integrated extrinsic academic motivation).

Teachers primarily noted how the Dream Director was supportive and with the Dream Team provided a safe environment to develop trusting relationships. Teachers saw this trusting environment for self-expression combined with being exposed to more opportunities and giving students the chance to lead their own projects resulting in improved affective, behavioral, and cognitive engagement at school. No teacher responses for School 1 were coded for academic motivation.

The following quote shows how teachers perceived an increase in student affective engagement.

Promoting creativity, empathy, collaboration, and positive attitude. Students always look forward to sessions with the Dream Team Director. Builds enthusiasm in people/students (Teacher 46, School 1)

This is largely in the form of confidence and enthusiasm, and cognitive engagement through collaboration. There is evidence that these are in conjunction with experiencing relatedness, due to the teacher's mention of empathy, and competence since students have an opportunity to work creatively. The next quote

provides another example of a teacher's perspective on the work of The Future Project in School 1.

Having the BEST Dream Director in Newark has truly given our students an opportunity to build and own their school community. For example, one student has been able to start an on-line company selling hair bows. One student planned, created and let a Black History Month program. Another student planned, created and organized a science fair. Most recently a group of girls created a week long endeavor to support the girls learning to love themselves. They covered the mirrors with inspirational messages. [The Dream Director] has had a tremendously positive impact on our school. (Teacher 42, School 1)

This quote illustrates the specific projects that students did that were intrinsically meaningful to them, and that also had a positive impact on the larger school community. This teacher attributed this to the Dream Director providing student the opportunity to develop their autonomy and competence through these projects.

In summary, at School 1, students typically reported feeling supported by the Dream Director to pursue the intrinsic goals they have identified, and to improve their motivation and behavior regarding school and interacting with others in order to ensure they stay on track to reach their goals. Teachers at school 1 did not mention student goals or motivation, but they did notice the students' improved dispositions and students taking initiative to plan and execute projects that were both personally meaningful to them and that improved the school.

4.5.3.2 School 4. School 4 is a public high school also located in an east coast city. It has an enrollment of 520 and so is of comparable size to School 1. School 4 had had two Dream Directors over the course of five years at the time of data collection. The principal survey reported that attendance did not change, but a substantial number of students were much more engaged because of The Future Project. As with School 1, a

variety of inputs are associated with impact according to teachers and students at School 4, though they are not quite as varied.

Figure 15 provides a visual overview of the data analysis on motivation and engagement from School 4. As at School 1, here student data also indicated high student motivation, with 100% of students coded at level 3 for motivation. Only 33% indicated behavioral engagement and there was no indication of affective or cognitive engagement. Teacher reporting provided some evidence of student motivation and all three forms of engagement (35% reporting increased motivation; and 28%, 35%, and 14% for increased affective, behavioral, and cognitive engagement respectively). The remainder of this section will illustrate and discuss these findings in detail

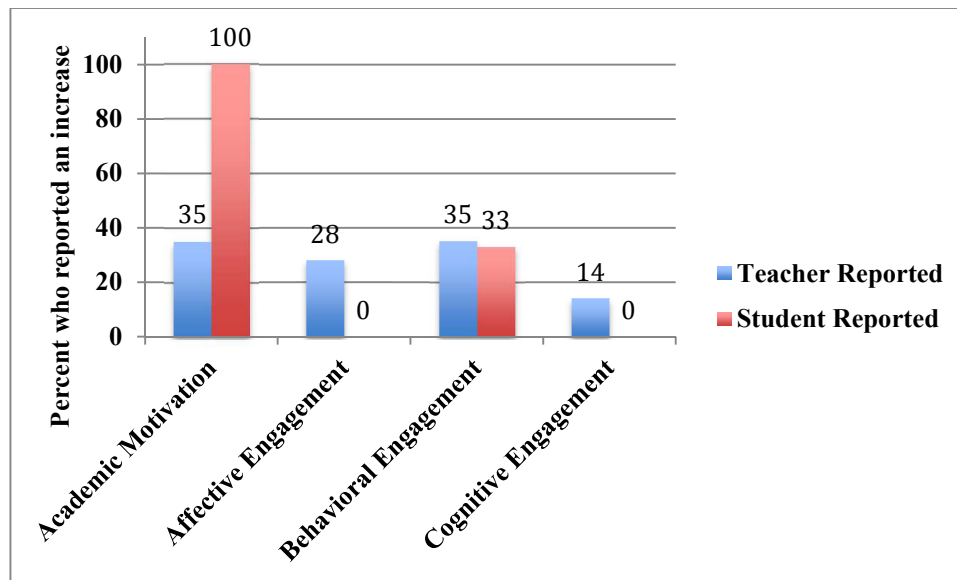


Figure 15: Student academic motivation and engagement for School 4.

The remainder of this section presents student and teacher quotes from School 4 to provide more detail and context illustrating the connection between The Future Project program inputs and autonomy, competence, relatedness, motivation, and engagement. In addition to Dream Director and peer support and identifying intrinsic goals, students and

teachers in School 4 also believe that a primary effect has been development of student leadership. These first quotes reflect the power of support from the Dream Director and bonding with the Dream Team.

Even now I don't have many peers, except for The Future Family, which is good because it's helping me. I thought I would need more people, but this is enough. Even in my own household I don't have much of an ear. (Student 11, School 4)

I opened up more with that dream team and the dream team this year and anybody who came in to The Future Project office I'm like, "Yeah, I'm [name]!" In the beginning it was just like I was looking around, and I was just looking around and I was shy, and I didn't really do much. And as time went on, like this year I'm more open with putting myself out there and I'm more into talking to big groups because I realize my potential last year. (Student 14, School 4)

This next excerpt is in reference to the Life Success workshops that this student led for her peers throughout the school. This is an example of an intrinsically motivated goal that she chose to pursue because of her participation with The Future Project.

Usually I'm up all night writing my lesson plans and typing it all out and I'm so into it. And I wake up and am like, "Oh my God, I should add this into my life class" or I should do this, or I see something on TV and I think, why don't I add this or do that. It's kind of an ongoing process either writing or watching or taking down notes or waking up at 3am and, whoa revelations! (Student 14, School 4)

In addition to students' drive to pursue intrinsic goals, teachers in School 4 noted the importance of the trusting relationships between students and the Dream Director. The quote below is an example of this.

Students express their desires and articulate their struggles. Level of student to student interaction and support is high. Mutual respect is growing. Students meet three times a week in an open forum to discuss what is on their mind and to help them respond to topic in the news - e.g. Black lives matter. This is a pressure value and creates understanding and support. We, staff and students, frequently reflect on how school culture has developed in the past few days. Cultural shift is dramatic; culture

doesn't develop on its own but in purposefully crafted. TFP is certainly a significant element in our purposeful and crafted cultural development. (Teacher 21, School 4)

Students saw this place of safe self-expression contribute to the development of Dream Team students as empowered leaders. This manifested in experiences for the larger student body like open forums (and the Life Success classes mentioned above) that helped all students feel safe discussing issues relevant in their lives. This in turn influenced the whole school culture.

This next teacher quote also highlights the relatedness experienced with the Dream Director and among the Dream Team, and that it resulted in student inspiration (affective engagement) and leadership and reliable participation in school activities (behavioral engagement).

They [students] are more inspired and feel more supported. [Dream Director]'s work with the Dream Team students is incredible. I coordinate a College Readiness program (College For Every Student) and the Dream Team students have always been the most consistent and engaged members of our program. In the past I've avoided them for leadership roles within the program, because I didn't want to overwhelm and overburden them. However it is beyond evident that the Dream Team students are the most capable and ambitious student leaders and we are now discussing the possibility of a more in depth cross collaboration where some of the upper class Dream Team members can choose to become the "Team Leaders" of our CFES program; which will in a very real sense will be more like they are branching out and developing their very own Dream Teams. (Teacher 17, School 4)

These perspectives from teachers are consistent with the student reporting at school in their emphasis on student empowerment, students felt they had a voice and could be leaders in their school community through the support of the Dream Director and the Dream Team to lead projects that improved the school.

4.5.3.4 Summary of case study portraits. These case studies show there is a

variation in inputs connected with the outcomes explored in this study (autonomy, competence, relatedness, and academic motivation and engagement). School 1 showed greater variability than School 4, but there were nine students interviewed at School 1 versus two students from School 4. Both schools revealed the value of inputs 4 (connecting with an adult in the school) and 13 (peer bonding). In School 1, students were more motivated from working on projects together and seeing how their personal goals connected to school. At School 4, the students did not directly discuss their academic motivation in conjunction with The Future Project, but there was a general discussion of how working on personally meaningful projects with the Dream Director and Dream Team increased their enthusiasm for school and being engaged as leaders in the school community.

4.5.4 Summary. The findings from exploring the mechanism for how The Future Project may have had an influence on student academic motivation and engagement showed that while there was no overall trend connecting attribution of autonomy, competence, and relatedness to The Future Project to increased student academic motivation, there were a number of salient quotes from students and teachers connecting bonding with the Dream Director and peers on the Dream Team through collaboration on student driven projects and identification of personal goals did increase many students' motivation to do well in their classes and increased confidence and inspiration to be engaged in their school community. Principal survey responses reflected this increased engagement and attendance. The case studies showed that there were some variations from school to school. In one school student academic motivation may be more apparent whereas in another student engagement in the form of leadership is most prominent.

Chapter 5: Discussion

5.1 Chapter Overview

The primary aim of this study was to begin to uncover possible mechanisms for how to authentically engage high school students in their educational experience considering the high rates of disaffection reported by high school students across the United States (Civic Enterprises, 2012; Gallup, 2016). Psychological research into motivation has shown that extrinsic motivators (e.g., in education this includes grades, test based accountability, pride, rewards, and the promise of a lucrative career) are actually associated with decreased creativity and critical thinking; and, in the long run, compromised mental and physical health, relationships, and overall well-being (Deci & Ryan, 2008; Kasser & Ryan, 1993; Kasser & Ryan, 1996; Ryan, et al., 1996). While PYD and SDT interventions hold promise as means of supporting authentic intrinsic motivation in school, their application in the educational setting is still emergent (Babic et al., 2014; Curran et al., 2017; Lonsdale et al., 2013).

This study of The Future Project program was designed to address the four primary gaps identified in the review of relevant literature. There are the need for: (1) further elucidation into how to foster autonomy, competence, and relatedness in the high school context, (2) exploration into the long-term effects years after school based positive youth development and self-determination theory interventions (Sulimani-Aiden, 2017), (3) more evidence as to whether a general, non-academic PYD/SDT intervention can translate into improved academic motivation and engagement, and finally, (4) elucidation of mechanisms by which autonomy, competence, and relatedness are fostered and then translated into improved academic motivation and engagement (Geldhof et al., 2014).

The implications of these findings will be presented in the following discussions:

- 5.2 RQ1a: The Future Project program support of autonomous motivation (gap 1, above)
- 5.3 RQ1b: The long-term impact of The Future Project program on autonomous motivation (gap 2, above)
- 5.4 RQ2a and RQ2b: Insights into how a non-academic intervention can influence student academic motivation and engagement (gaps 3 and 4, above)
- 5.5 Limitations of the study
- 5.6 Conclusions and Further Implications

5.2 RQ1a: The Future Project support of autonomous motivation

Before addressing how The Future Project program intervention could contribute to the understanding the mechanism of how to improve autonomy, competence, relatedness, and academic motivation and engagement in the school setting, it was first important to show whether students' increased autonomous motivation (autonomy, competence, and relatedness) could be attributed to The Future Project. As reported in Section 4.2, Figure 6 summarizes the overall positive relationship found between students' autonomous motivation and attributing growth in autonomy, competence, and relatedness to The Future Project.

More nuanced analysis shown in Figure 5 broke down these attributional components to reveal that the most influential factor was the sense of relatedness fostered by The Future Project. Despite that fact that the importance of relationships in student motivation and achievement has been fairly well established (Dusenbury & Weissberg,

2016; McMurrer et al., 2012; Roehlkepartain, et al., 2017), student polls from a decade ago and today reveal the continued lack of supportive relationships in school, particularly between students and adults (Civic Enterprises, 2006; Geraci et al., 2017). These results in Figure 5 show that the The Future Project is a promising approach to address this need in particular.

5.3 RQ1b: The long-term impact of The Future Project program on autonomous motivation

Research on the longitudinal effects of SDT academic interventions is underdeveloped (Eisenman, 2007; Taylor et al., 2012; Van Petegem et al., 2011). Analyzing alumni data for this study was an attempt to contribute to this knowledge base, however alumni findings were largely inconclusive regarding the overall attribution to The Future Project correlated with levels of autonomous motivation. Figure 9 presented these findings and shows no overall relational trend between autonomous motivation and attributing increase to The Future Project, though one explanation is that most alumni showed high autonomous motivation, a finding that warrants further study. Figure 8 revealed that the most influential factor was the sense of competence fostered by participation in The Future Project. The only literature tracking the long-term post-graduation effects of PYD programming on youth showed that having a close bond with an adult was the only predictive factor of long-term results (Sulimani-Aiden, 2017), which was not a strong contributing factor for alumni in this study, but was the most influential factor for current students. The discrepancy in alumni versus current student findings could be explained by the fact that The Future Project model has evolved over

the past few years, and previously focused on individual project building and less upon teams and relationships. Designing longitudinal studies to track current students of The Future Project for a number of years beyond graduation would provide further insight into the long-term impact.

5.4 RQ2a and 2b: Insights into how a non-academic intervention can influence student academic motivation and engagement

Research has already shown that academic motivation can be more dependent upon internal perception of autonomy, competence, and relatedness than personal status factors like SES or ethnicity (Connell et al., 1995; Skinner, 2009). Previous observational studies have indicated specific forms of relatedness that are linked to improved academic motivation and engagement. For example, when teachers were perceived as warm and caring (Ryan, Stiller, & Lynch, 1994; Skinner et al., 2012), or when students exhibited openness and conscientiousness (Komarraju & Karau, 2009) student motivation increased. Similarly, student motivation was also higher when sense of autonomy in the form of free self-expression and interest-driven classroom curricula were present (Reeve, 2012). Findings from this current study corroborate these previous studies in that both students and teachers indicated increased student motivation due to being able to connect with an adult in the school, and identifying and connecting students' intrinsic goals to their educational experience. This therefore indicates that The Future Project program can provide tangible implementation strategies to promote autonomy and relatedness leading to improved motivation in ways that research had only previously observed.

An additional insight from this study is the relevance of students' conceptions of

their future selves, identification of intrinsic goals in relation to their future selves, and relating these to academic motivation and achievement. This concept was addressed by several items in the Teacher Perception of Student Motivation Scale (Hardre et al., 2008), but there was no mention of it in the SDT literature on student motivation, and the school-based PYD interventions made no mention of this concept either (Cho et al., 2005; Gopalan et al., 2013; Karcher, 2009). Further exploration to distinguish the role of intrinsic goals versus intrinsic goals associated with future self and their relative influence on student motivation is warranted.

Additionally, while researchers within and beyond PYD have discussed the importance of the community context beyond one-on-one relationships for student motivation (Benson, 2003; Cummings, 2003; Damon, 1990; Damon, 1997; Dowling, Gestsdottir, Anderson, von Eye, & Lerner, 2003; Dowling et al., 2004; Flanagan & Sherrod, 1998; Gore, 2003; Lerner, 2004; Little, 1993; Murnane, 2013; Pittman, Irby, & Ferber, 2001; Roth, Brooks-Gunn, Murray, & Foster, 1998; Scales et al., 2000; Wheeler, 2003; Youniss, McLellan, & Yates, 1999), the SDT literature reviewed for this study made no salient mention of it, nor did any PYD school-based interventions intentionally develop a positive broader community (Curran et al., 2017). Findings from this current study indicated that the close peer group (Dream Team) and project building that generated a positive atmosphere in the whole school were both associated with increased student affective and behavioral engagement.

In sum, this study indicates a number of possible mechanisms at play. It does corroborate that by combining mentoring and peer relationship building does indirectly improve academic motivation and engagement, as was proposed in several studies (Babic

et al., 2014; Eisenman, 2007; Lonsdale et al., 2013; Reeve, 2012). Additionally, since The Future Project is built around students' personal passions and values it contributes to the emerging research around the role of students as creators of their own development (Larson & Tran, 2014). Findings in this study provide more examples that students who are normally disengaged, withdrawn, and even angry, become optimistic and interactive in their school work and school community when given the opportunity to design and pursue their own goals outside of the classroom. These preliminary findings provide insight into how a PYD program can generate a school context that supports academic motivation and engagement.

As the previous paragraph indicated and the case study results concluded, there are a wide variability of program inputs connected with student motivation and engagement showing that student motivation and engagement are highly personal and complex, and thus program offerings, including mentorship strategies, need to be highly nuanced and customizable. This is consistent with findings from Karcher & Nakkula (2010) regarding effective mentorship. It also reflects the highly varied results and subjective nature of the relationship between autonomy, competence, relatedness and motivation to act in any given context. As Deci and Ryan (1985) concluded, individual dispositions must be accounted for to see results in behavioral initiation and regulation. Despite the variability in results, however, there were several overall takeaways upon which students and teachers seemed to agree, students are more motivated in school when The Future Project provides positive peer and adult support that generates confidence, optimism, and connects students' intrinsic goals with school achievement.

5.6 Limitations

There are numerous limitations to this study primarily due to the fact that it employed secondary data analysis. The main limitations include: (1) instruments were not designed to study or measure the outcomes of interest in this study, (2) student and alumni data was collected from a very small pool of the overall program participants and most were either self-selected or participated out of logistical convenience, so there is likely response bias, (3) teacher respondents were self-selected and therefore likely have biased opinions both for and against The Future Project programming in their school.

As touched upon in previous sections, because instrumentation for data collection was not developed for this study, not only did it not generate robust and codable data from all participants, but it was not possible to quantitatively compare student, teacher, and administrator results to draw conclusions as to the extent of the impact The Future Project may or may not have had.

In regards to data analysis, not only were the instruments not intentionally designed for this study, but accurate methods for measuring student autonomy, competence, relatedness and engagement remain elusive. Deci & Ryan (1985) found that different personalities perceive the same situations differently, so developing a diagnostic tool for how to determine each individual's behavioral initiation and regulation style may be a more promising approach to fostering autonomous motivation in all students, rather than trying to distill as single approach that works for all students. Studies since have been unable to determine a formula to account for this variability. To measure engagement, according to Reeve (2012), current engagement assessments are incomplete

and fundamentally incompatible with self-determination theory because they are based on the assumption that the only valid forms of engagement are within the unidirectional teacher-to-student learning assignment dynamic. This is inherently contradictory to a context that includes student autonomy and competence. Additionally, even the most up-to-date scales measuring student engagement that were adapted for coding in this study, are in and of themselves inconsistent according to Fredericks et al. (2016). In reference to their 2012 literature review on instruments used to measure student engagement, they found that the self-reported psychometric scales were not well validated and were inconsistent. “For example, some measures included effort as an indicator of behavioral engagement to reflect compliance with required work in school, while others included effort as an indicator of cognitive engagement to describe the degree of psychological investment in learning (Fredricks et al., 2016, p.6).

5.7 Conclusions and Implications

This study is unique in that it targeted The Future Project, a multi-faceted program that actively addresses intrapersonal, interpersonal, and larger community contexts simultaneously – all of which have been shown to be relevant in SDT and PYD research. The main findings revealed that The Future Project provides promising strategies for increasing students’ sense of relatedness and increased academic motivation and engagement through the relational support of the Dream Director, peers, participating in projects that influence the school community, and connecting their intrinsic goals for their future selves with their current academic experiences.

The findings from this study are intended to provide a preliminary report on the

impact that The Future Project intervention has on meeting the underlying psychological needs of autonomous motivation in participating students, in changing student academic motivation, and engagement, and exploring the mechanism whereby meeting these psychological needs in the context of The Future Project translates into changes in academic motivation and engagement. The results will also contribute to the intersection of psychology and education research by providing evidence of whether an in-school SDT intervention that is not designed to directly influence academic outcomes, could have a positive effect in that regard.

The remainder of this section will discuss possible future studies that have emerged from this study to further contribute to the larger SDT and PYD research fields. Additionally, implications for The Future Project program model will be addressed.

5.7.1. Re-create this study with intentional design. In the future, in order to rigorously study the effect of The Future Project on student academic motivation and engagement it will be necessary to design data collection methods and instruments with these outcomes in mind. This would employ validated survey measures designed for both students and teachers with representative samples of students and teachers. These would be followed by semi-structured interviews with subsets of each of these groups. All administrators would be surveyed using validated measures designed to solicit administrator perspectives on student motivation and engagement, and all administrators would be interviewed as well.

5.7.2. Probing long-term effects. Since literature on the long-term effects of SDT and PYD interventions is scarce (Curran et al., 2017; Eisenman, 2007; Taylor et al., 2012; Sulimani-Aiden, 2017; Van Petegem et al., 2011), a more rigorous follow-up study

could be designed to determine if and how The Future Project increases students' continued intrinsic motivation, both in terms of post-secondary education and career choices. As mentioned throughout this study, intrinsic motivation is predictive of long-term health and well-being, outcomes that are of central concern to The Future Project mission. Next steps for The Future Project would include building out The Future Project alumni network such that it would be possible to track a representative sample of alumni, and designing research using validated psychometric measures of well-being along with rich qualitative data collection methods.

5.7.3 Quality of mentorship. The mechanism of effective mentorship remains elusive (Kercher & Nakkula, 2010; Wood & Mayo-Wilson, 2011). Since the role of the Dream Director is the primary characteristic of The Future Project program model, findings from this study show how highly nuanced and personalized the experience is for every student. Further study into what aspects of mentorship ought to be standardized for Dream Directors and what skills and approaches will allow them the fluidity to adapt to each individual student could maximize The Future Project's impact on all student participants. This would entail not only both original research and relevant literature reviews, but then The Future Project would need to create effective professional development for Dream Director training as a result, and could inform the broader literature base on powerful mentorship techniques.

5.7.4 Peer bonding and mentoring. Lastly, one area of PYD that few interventions besides The Future Project emphasize is the power of peer relationships – particularly in adolescence. Further exploration both theoretically and empirically as to how to promote positive peer bonding and mentoring would be useful to both The Future

Project and build upon the relevant research in the PYD field (Akerlof & Kranton, 2000; Akerlof & Kranton, 2002; Karcher, 2009).

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Appendix A

Detailed Overview of The Future Project

The main aim of The Future Project is to help high school students discover and pursue their passions and to find purpose in those passions as a way to also make the world a better place. The rationale behind the importance of this aim is that if students feel like they can live with passion and purpose then that will help inspire them to do well in all areas of life. Since it is mandatory for young people to attend school, The Future Project founders agreed that the school setting was the most logical place to reach the largest number of young people. Supporting schools themselves to help the students discover their passions and purpose is a secondary aim of The Future Project. The Future Project, founded in 2011, is a non-profit educational organization operating in 45 schools in seven cities across the United States: New York, NY; Newark, NJ; New Haven, CT; Philadelphia, PA; Washington DC; Detroit, MI; and San Francisco, CA. It works directly with over 1000 students each year most of whom attend underserved urban schools. The Future Project program consists of four main components: (1) mentorship (dream directing); (2) development of student leadership teams (Dream Teams); (3) student-led projects that have a direct or indirect impact on the school or larger community; and (4) Dream Director and student-led courses to build skills relevant to student projects or personal growth.

The program places an adult with the title of Dream Director to work full-time in the school to build one-on-one relationships with students as well as lead Dream Teams

and lead the skill building courses. The schools provide a room that serves as both the Dream Director's office and as a meeting space with the participating students. At the very beginning of the first year that a Dream Director is in a school, they conduct a query known as The Possibility Audit to get a sense of the school culture, values, and the needs expressed by students, faculty, and administrators; the Possibility Audit is also an opportunity for Dream Directors to initiate relationships with people in the building.

Dream directing is The Future Project's terminology for mentoring, or coaching that specifically emphasizes helping students identify things they are passionate about or developing a larger purpose. They are asked to both internally reflect upon and outwardly act upon pursuing goals related to their passion and purpose. This occurs at both the level of individual students and entire Dream Team. An example of the internal reflection that Dream Directors help with might involve conversations around why a student does not feel confident enough to reach out to a local arts organization that they would love to be involved with. As far as outward action is concerned, Dream Directors help students create plans and hone their time management skills and priorities in order to more effectively work towards the goals they have identified. The Dream Director primarily works with Dream Team members, but often develop less formal relationships with a number of other students in the school who are interested in leading their own project or helping with another student's project.

Along with the Dream Director, the Dream Teams are at the core of The Future Project program. Dream Teams typically consist of 15-20 students per school and represent a range of students. Some are top achievers who already show great leadership, others are students who are constantly in trouble, and some are wallflowers. Some

students decide to apply to the Dream Team of their own accord; others have been recommended by a teacher or administrator. Overall, Dream Team members typically are self-selected, but then the Dream Director ultimately decides who is on the Dream Team because so many students apply.

Students report being drawn to joining the Dream Team for many reasons. The most commonly cited are: the Dream Directors are full of enthusiasm, the students like the idea of being able to pursue ideas they had that they didn't have an outlet for before, and some just want to be part of a positive community within the school setting. Dream Teams, being comprised of 15-20 members, are only a small sample of the typical Future Project school enrollment of anywhere from 300-2000 students, but as a team of leaders, they themselves work with many others in the building. The Dream Team serves two primary functions. The first is to collectively generate project ideas around how to improve their school and support their school community. Secondly, they develop deep personal bonds and actively coach one another to be their best selves. The Dream Director facilitates Dream Team meetings and project development, but they are largely student-led. Examples of Dream Team projects include creating morale boosting school events, researching an issue they care about that is relevant to their school or educational experience and meeting with the school administration to discuss possible ideas for improvement, and coaching peers who are not on the Dream Team. The students' motivation to participate stems from the fact that they themselves are the drivers of the projects and events; the motivation is intrinsic. The Dream Director supports them by acting as a coach and mentor at both the one-on-one and group levels. Dream Directors also help students set goals and create step-by-step plans for accomplishing them. Dream

Directors and fellow Dream Team members are also confidantes. Many students report that the most important aspect of being part of the Dream Team is having people who care about them and who support them in pursuing what they are interested in. At some schools, the Dream Directors do team up with teachers such that students can earn academic credit for their projects, but this is so rare it is not considered part of the work of The Future Project.

Student-led projects are the most abundant output of The Future Project program. Both Dream Team members and any student enrolled in the school can choose to lead a project. Projects students have completed in the past range from giving students who recently immigrated to the United States a tour of the local city to help them feel more at home, to outreach programs to keep kids off the streets, to support networks for students who have lost their parents, to writing music, recording an album, and performing for their local community. Students in all 45 Future Project schools generate hundreds of such projects each year. Some projects only require the student to work on their own and meet for one-on-one coaching from the Dream Director, but others may involve teams of as many as 20 or 30 students. What all projects have in common is that they are student generated, student-led, Dream Director supported, and must in some way directly or indirectly have a positive impact on their school or the larger community. The methodology for supporting students to build projects has not been established. Thus far each Dream Director has a unique and nuanced approach. The Future Project is in the process of studying the efficacy of the various approaches to standardize programming.

Lastly, Dream Directors, and more and more so students, lead groups of students in skill building courses, or workshops. Initially these targeted skills that could help

students directly with their projects such as how to pitch an idea (since a number of student project ideas need some funding) or public speaking. This has evolved over time to also include skills that students have asked for such as how to write a resume, or how to be a more positive thinker. The course options vary from school to school depending on the Dream Director's and students' skill sets, interests, and needs. These courses have played a smaller role in The Future Project program, though as more and more students lead their peers in such skill building, the more prominent it has become. These informal courses are open to all students who attend the school – they are not limited to Dream Team members, and they do not qualify for academic credit. While none of this programming directly targets academic outcomes, The Future Project does value education and Dream Directors are often working with students to balance their academic goals with other goals and also actively discuss how pursuit of their interests is connected to their success in the classroom.

In the first few years of The Future Project there was substantial anecdotal evidence from teachers, principals, students, and Dream Directors that the presence of The Future Project program in the school shifted overall morale, attendance, and academic motivation. There were no trained researchers to collect data and conduct analyses, some of the leadership team members developed interviews and surveys with the goal of gathering feedback about what aspects of The Future Project were most important for the students and why. Three themes consistently emerged from student interviews in prior years: they appreciated having the opportunity (1) to connect with their peers and the Dream Director, (2) to pursue something they enjoy and feel good about, and (3) to have a chance to contribute to their school or larger community. These

emergent themes appeared to reflect that participation in The Future Project may be meeting the needs of relatedness, autonomy, and competence respectively. The Future Project is limited to working in high schools, but has an overall objective to support students to thrive as people for years to come.

Appendix B

Summary of Future Project Participation

The Future Project kept a digital tracking system for the program activities. Though many Dream Directors did not log all activity in their schools, it does provide an overview of student participation. The table here shows the summary of activity recorded within each city and the total national activity. In sum, 9,048 students across the country are listed in the system, indicating that they either led a project, joined a peer project team, received 1:1 coaching with the Dream Director and/or participated in Future Project workshops. The data shows that 2,031 students led a total of 1,457 projects, indicating that a significant number of students choose to co-lead. In terms of time spent participating in any Future Project related activity that warranted creating a profile, 691,133 hours were logged across the nation. Lastly, the number of distinct engagements that occurred was 14,847 nationwide.

City	# Schools	# Students with profiles	# Students leading projects	#Projects	#Student hours logged	#Engagements
Detroit, MI	14	1,317	365	290	159,750	1,995
Newark, NJ	6	2,651	570	335	97,518	3,299
New Haven, CT	6	1,137	382	236	57,904	2,074
New York, NY	9	2,862	431	387	198,630	5,177
Philadelphia, PA	3	44	2	9	2,863	205
San Francisco, CA	4	440	120	74	15,985	963
Washington, DC	3	597	161	126	158,483	1,134
National Total	45	9,048	2,031	1,457	691,133	14,847

Appendix C

Research Sites Data Map

	School	City	Enrollment 2015-2016	# years with TFP (#DDs)	# of Active Student (Alumni) Interviews	# of Administrat or Surveys	# of Teacher Surveys	# of Teacher Interviews
1	Merit Prep Charter school	Newark, NJ	Grades 5-9 465	1 (1)	9	2	5	
2	Riverside Academy	New Haven, CT	110	3 (1)	4	10		
3	Theodore Roosevelt Senior High School	Washington, DC	708	2 (1)	3	1		
4	Richard R. Green	New York, NY	520	5 (2)	2 (2)	1	14	1
5	High School in the Community	New Haven, CT	250	4 (1)	1		5	2
6	Eastern High School	Washington, DC	967	3 (2)	(1)		1	
7	Renaissance High School	Detroit, MI	1,126	2 (1)	(3)	1	3	
8	West Side High School	Newark, NJ	559	3 (3)	(1)			
9	Leadership Institute High School	New York, NY	139	3 (2)	(2)			
10	NYC Lab School for Collaborative Studies	New York, NY	1,056	4 (2)	(3)		10	1
11	Henry Street School for International Studies	New York, NY	256	4 (2)	(2)			

	School	City	Enrollment 2015-2016	# years with TFP (#DDs)	# of Active Student Interviews	# of Administrators or Surveys	# of Teacher Surveys	# of Teacher Interviews
12	East English High School	Detroit, MI	1,573	2 (2)	(1)		6	
13	Legacy School for Integrated Studies	New York, NY	20	1 (1)	(1)			
14	International Studies Academy	San Francisco, CA	196	2 (2)			5	2
15	Paul Robeson	Philadelphia, PA	168	1 (1)		1	8	1
16	NEST+M	New York, NY	650	1 (1)		1	5	3
17	Detroit School of Arts	Detroit, MI	490	2 (2)		1	2	1
18	Ben Franklin High School for Finance and IT	New York, NY	320	1 (1)		2		
19	Cody Academy of Public Leadership	Detroit, MI	268	2 (2)		1	2	
20	Frederick Douglass Academy for Young Men	Detroit, MI	153	2 (1)		2	9	
21	h Learning Tech	New York, NY	500	2 (1)		1	4	
22	South Philadelphia High School	Philadelphia, PA	552	1 (2)		1	1	
23	The College Academy	New York, NY	498	3 (1)		1	5	
24	Weequahic High School	Newark, NJ	483	2 (1)		1		
25	Western International High School	Detroit, MI	1,844	2 (2)		1	1	

	School	City	Enrollment 2015-2016	# years with TFP (#DDs)	# of Active Student Interviews	# of Administrat or Surveys	# of Teacher Surveys	# of Teacher Interviews
26	Brooklyn Community Arts and Media	New York, NY	430	1 (1)			3	
27	East Side High School	Newark, NJ	2,500	2 (1)			5	
28	Central High School	Newark, NJ	766	1 (2)			3	
29	Wilbur Cross High School	New Haven, CT	1,650	4 (1)			3	
30	New Horizons School	New Haven, CT	64	2 (1)			2	
31	Hill Regional Career High School	New Haven, CT	700	3 (2)			3	
32	Francis L. Cardozo Educational Campus	Washington, DC	899	3 (3)			8	
33	The U School	Philadelphia, PA	159	2 (2)			5	
34	Cass Technical High School	Detroit, MI	2,430	2 (1)			6	
35	San Francisco International High School	San Francisco, CA	365	2 (1)			5	
36	Academy of Arts and Sciences	San Francisco, CA	325	2 (1)			2	
37	Thurgood Marshall	San Francisco, CA	450	2 (3)			6	

Appendix D

Student Interview Protocol

1. What are you most excited about in your life?
 - a. What goals do you have related to this or anything else?
 - b. What are you doing right now to pursue these goals?
 - c. Is The Future Project playing a role in that? (Explain broad meaning of The Future Project—Dream Director, Dream Team, events, etc.)
 - d. How?
2. Do you feel you've changed this past year? What changed?
 - a. What key moments stand out to you from that?
 - b. (If not already clear) How did TFP play a role in that process?

Appendix E

Alumni Interview Protocol

1. Which areas of your life right now--work, school, family, friends, relationships--do you feel you are thriving?...most excited about, or empowered by? Can you describe that for me in detail? Can you give me some specific examples?

- a. Have you always felt that way about that aspect of your life?
- b. [If not] When did it change? What changed it?

2. What impact, if any, did working with The Future Project have on you? (Dig deeper to see if impacts were more on mental frameworks--how they looked at the world--and/or behaviors or skills. Ask for specific anecdotes that exemplify what they're talking about if they don't provide them automatically)

[If they described an impact]:

- a. What specific things that you, your peers, or the DD did contributed to making that happen?
- b. Do you still experience this impact in your life now? Why/why not?

Optional:

- c. What effect, if any, did working with The Future Project while you were a student have on how you thought about learning and school?
- d. Were there any other teachers or adults or fellow students who had an impact on how you thought about learning or school?

Appendix F

Teacher Interview Protocol

1. What is your understanding of the work of The Future Project, the goals and how it operates?
2. How do you feel about the presence of TFP in your school? Has this sentiment changed over time? Can you give us specific examples of things that happened that shaped your opinion?
3. Have you noticed a change in students, teachers and/or staff/administrators at your school that you attribute to TFP? Could you explain and provide specific examples?
4. If time, interest, and anonymous data available, share quick overview of data results from TFP that year and their school in particular to see what they think of it (does it match their observations of what they saw happening? does it miss something they think is key to explore? does it surprise them and, if so, why?)

Appendix G

Administrator Survey Student Engagement Questions

1. How has The Future Project affected attendance?

Attendance is much better because of The Future Project

Attendance is better because of The Future Project

Attendance has not changed because of The Future Project

Attendance is worse because of The Future Project

Attendance is much worse because of The Future Project

2. How has your Dream Director affected student engagement in school?

A substantial number of students are much more engaged

A substantial number of students are more engaged

A small group of students are much more engaged

A small group of students are more engaged

Student engagement hasn't changed

Students are less engaged

Students are much less engaged

Appendix H

Teacher Survey Open-Ended Questions

1. Can you think of specific examples of the effects having a Dream Director in your school had on students (positive and/or negative)?

2. How (if at all) do you feel having a Dream Director has affected teachers or staff/administrators at your school (positive and/or negative)?

Appendix I

Coding Scheme 1:

Students' Autonomy, Competence, and Relatedness

(Deci & Ryan, 1985; Deci & Ryan, 1991; Deci & Ryan, 2000; Deci & Ryan, 2004)

Psychological Needs	Level 1	Level 2	Level 3
<p>Autonomy</p> <p>Autonomy is defined as a sense of volition or being responsible for one's own behavior, and ought not to be confused with individualism, independence, or selfishness.</p> <p><u>Key characteristics of autonomy to look for:</u> (adapted from the Self-Determination Scale, Deci & Ryan, 1985)</p> <ol style="list-style-type: none"> 1. Feels the psychological freedom to speak up or act upon an idea 2. Perceives internal locus of causality 3. Feels they have choices 4. Understanding and having control over own emotions 5. Feels able to be one's self 6. Able to pursue own interests 7. Able to make own decisions 	<p>If the student indicates that most or all of the time they experience a lack of autonomy or supporting variables thereof, then they are considered to be a level 1. If there are one or two positive instances but the overall tone and content of the interview shows a consistent lack of autonomy, then that is also a level 1. The content could include indicating interests or desires that they feel unable to pursue or indicate situations where students do not feel they have the power to make choices or decisions or have a voice. This can be within or beyond the context of TFP.</p> <p><i>Exemplar:</i> <i>I would really like to start my own group to help younger kids learn how to read, but I think I'm too young. Maybe after I go to college and I can get my older brother to help me because he's a teacher, then I can do it.</i></p>	<p>Here the student interview may include one or more of the examples from the list above, and the student may even refer back to times where their autonomy was lacking, but ultimately at the time of the interview the overall tone can be positive with regard to autonomy, but their sense of autonomy is either (a) limited to certain contexts or (b) is experienced only some of the time.</p> <p><i>Exemplar:</i> <i>Because the Dream Director really asks us what we want to do, I really enjoy being on the dream team and feel like I can make a difference. I can make things happen (context dependent).</i></p>	<p>Here the student interview may include one or more of the examples from the list above, and the student may even refer back to times where their autonomy was lacking or dependent upon circumstances, but ultimately will warrant a level 3 of autonomy the student must in the end (a) express having a general sense of autonomy that is not necessarily context dependent, and (b) is implied or explicitly stated as experienced most or all of the time.</p> <p><i>Exemplar:</i> <i>I've been realizing more and more that I can do anything I put my mind to. Like in school, my grades have been good, but then this past year I was really involved in other things and my test scores were a little lower, but I know I can get them back up again.</i></p>
<p>Competence</p> <p>Competence is defined as encompassing "people's strivings to</p>	<p>For example, the student may express a goal or desired outcome but indicates they do not</p>	<p>Here the student interview may include one or more of the examples</p>	<p>Here the student interview may again include one or more of the examples from</p>

<p>control outcomes and to experience effectance; in other words, to understand the instrumentalities that lead to desired outcomes and to be able to reliably effect those instruments” in an interactive ongoing and effective manner with their environment and in relationships. Instrumentalities that originate with the person include tangible skills like being a good dancer or intangible skills such as having problem solving insights or the confidence to reach out to people.</p> <p><u>Key characteristics of competence to look for:</u></p> <ol style="list-style-type: none"> 1. Takes credit for own accomplishments 2. Feels acknowledged, needed, or appreciated for accomplishments 3. Feels that own skills/accomplishments are useful to others 	<p>know how work towards their goal. They may also mention lacking skills or hobbies, or having skills or hobbies that are not acknowledged or useful.</p> <p><i>Exemplar:</i> <i>I really love animals and dream of being a marine biologist or a veterinarian, but that’s just something I think about. I’m not doing well in school, so I’ll probably never go to college.</i></p>	<p>from the list above, and the overall tone can be positive with regards to competence, but their sense of competence is either (a) limited to certain contexts or (b) is experienced only some of the time.</p> <p><i>Exemplar:</i> <i>I have always been interested in art but I never really thought I could do anything with it or that anyone else cared – I just liked to draw in my free time. My Dream Director and the others on the Dream Team told me I should enter this contest and supported me even when I didn’t believe in myself, and I actually won second place in the competition. I was shocked! Next week I’m starting an art class that my Dream Director helped me sign up for and get the money to pay for, and there’s another contest that I am already planning to enter. (context dependent)</i></p>	<p>the list above, but to warrant a level 3 of competence the student must (a) express having a general sense of competence that is not necessarily context dependent, and (b) is implied or explicitly stated as experienced most or all of the time.</p> <p><i>Exemplar:</i> <i>I now truly believe I can do anything I put my mind to. I’ve seen how to get past my fears and other barriers, and I know what it takes to get good at something.</i></p>
<p>Relatedness Relatedness is defined as encompassing a person’s strivings to relate to and care for others, to feel that those others are relating authentically to one’s self, and to feel a satisfying and coherent involvement with the social world</p>	<p>The student expresses a lack of closeness, trust or belonging with others. This could be within TFP context or beyond. This includes discussion of either how others relate to them or how they relate to others.</p> <p><i>Exemplar:</i> <i>I just don’t feel like I</i></p>	<p>Unlike level 1, here the student does provide an indication that there are people they trust, feel close to, or share a sense of belonging, but this is context dependent. It is not necessarily something they are able to experience</p>	<p>The student interview indicates the student’s ability to experience closeness, trust, or belonging in many situations. Though the relatedness may be strongest with a few individuals or one group, there is also evidence that</p>

<p>more generally.</p>	<p><i>have anyone I can really talk to at school. I just transferred here and the teachers all just care about if you are doing your work, and the students already have their friends. And I just don't know if people will like me; I'm really shy.</i></p>	<p>across varied settings and/or consistently.</p> <p><i>Exemplar: Yeah, with the dream team we can talk about anything, and I know they have my back. It helps because sometimes I really struggle with my teachers, so when I know I can come to a dream team meeting and they will help me with that.</i></p>	<p>there is greater sense of relatedness and openness and care for a larger community, which is evidence that they have come to feel confident in their ability to trust, care for, and relate to all people.</p> <p><i>Exemplar: Before I was kind of angry all the time and I didn't trust people, but now that I have a good set of friends I notice that when I meet new people I first assume that they are a good person and that we can be friends.</i></p>
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APPENDIX J

Coding Scheme 2:

Students' Attribution of Autonomy, Competence, and Relatedness to The Future Project

(Garbarino & Holland, 2009; Scriven, 2008; White & Phillips, 2012)

Attribution to The Future Project Level Definitions	Descriptions/Exemplars applied to Autonomy	Descriptions/Exemplars applied to Competence	Descriptions/Exemplars applied to Relatedness
<p>Level 1: No indication of impact from TFP. Throughout the interview, where students express their autonomy, competence, or relatedness they show no or minimal indication that TFP has in any way influenced their perception of each of these psychological needs. Regardless of their levels of autonomy, competence, and relatedness, their TFP attribution level may vary. For attribution level 1 students either explicitly mention not having changed, they fail to mention that they have changed, or they explicitly credit others outside of TFP for help in this regard more so than anyone from TFP (dream director or other dream team members/future fellows).</p>	<p>The example here shows that the student still does not believe they have the control or power to pursue their goal.</p> <p><i>I guess I've always wanted to open up my own business like for kids who are like not allowed to have certain things that we have, like opportunities that we have. Open up a school, or not a school, but like anybody could come in and it's just like a free time and you can express yourself in any way, and you can do art and anything that you want... But I think that I'm too young, basically to even start it. That's why I'm basically waiting for my sister to go off to college so she can basically help me</i></p>	<p>There were no exemplars from the data set, but students were coded level 1 if there was no mention of Future Project contributing to skill building, so when evidence of level 2 and 3 is simply lacking.</p>	<p>As with level 1 of competence, there were no direct quotes to represent TFP's lack of contribution to autonomy, so a level 1 was coded when evidence for level 2 and 3 is lacking.</p>
<p>Level 2: Some indication of impact from TFP. Primarily, assigning a level two will be determined by whether a student mentions that they are different this year in regards to their attitudes, behaviors, or relationships, but they don't explicitly state that it is a result of TFP. It is safe to assume that TFP played</p>	<p><i>I really didn't used to do anything. I used to just sit and relax and stuff, but now I see that the world is changing and you have to try and help better people and try to talk to people and get them to realize this is not</i></p>	<p>There are not necessarily single quotes that can serve as an exemplar here, but a level 2 was applied when a student discusses a pre-existing skill that The Future Project helped them further</p>	<p>This is a level 2 because there is not evidence that this was a dramatic change for this student, but only evidence of improvement in connecting with others.</p>

<p>some role due to the timing of the change and the fact that the student thought to mention it in an interview about TFP. Here it is also important to discern the extent of the change. If the change seems small to moderate or even difficult to assess though clearly they've changed, regardless of direct or indirect attribution to TFP, that would be a level 2.</p>	<p><i>what you really want, that you should be headed down in the right direction instead of the wrong...I think [Dream Director] helped me.</i></p>	<p>develop.</p> <p><i>Example quote from a student who was already interested in acting:</i></p> <p><i>She's the one who got me into the Drew acting classes – me and a couple other students.</i></p>	<p><i>It taught me to work more because I wasn't only with my dream team. I was used to being with them, but it taught me how to work well with people I don't know and cooperate.</i></p>
<p>Level 3: Indication of high impact from TFP. Determining level three here is more straightforward. If the student (a) explicitly credits TFP for at least one change in their attitude, behavior, etc. at some point in time, and (b) indicates that the change has been significant for them, then that warrants a three.</p>	<p><i>Yeah. I feel like if it wasn't for [Dream Director] and the Dream Team, I'd probably still be making the same stupid mistakes I did. Just going to high school and not even caring about my grades. Just fitting in. But when I met [Dream Director], I could be smart and could change. Before I knew [Dream Director] it was just commotion.</i></p>	<p><i>I feel like I became more mature, I became more open to ideas, I became just like, I don't know, I just feel like I really changed. I really, I'm more open to ideas, I want to help people, all that stuff. I know that it takes some time. Either way I know I'm gonna do it because I put my mind to it. Q2: "Especially where I come from. You don't have a lot of opportunities, there's a lot of bad stuff, so for me to be in the Future Project it really helped to see there's more to life than what it is right now."</i></p>	<p>The example here shows both a qualitative change in the students' attitude and mode or relating, and the student directly attributes this change to TFP.</p> <p><i>I know my attitude has changed. From the beginning, I had like, I wouldn't really show it but I was just like, had a little attitude, but I'm like, it's better...I would say like anger...I think it's like because I have more people to express it to.... Before I really didn't have anyone to talk to but now I have [Dream Director] and the dream team.</i></p>

APPENDIX K

Coding Scheme 3:

Student self-reported academic motivation

(Fulmer & Fritjers, 2009; Midgley et al., 2000; Perrot, 2001)

Academic Motivation Definitions	Characteristics and Example Quotes
<p>Level 1: Lack of Motivation Student lack of motivation can be identified by either direct proclamation of 1. dislike and 2. avoidance of school, schoolwork, and learning. It also shows up commonly 3. an ambiguous and apathetic attitude. These are the three main characteristics to look for when coding for level 1, lack of motivation.</p>	<ol style="list-style-type: none"> 1. dislike (e.g. <i>Yeah, I go to school, but I don't like it. I can't wait to graduate.</i>) 2. avoidance (e.g. <i>Class is so boring, I try to get out of it when I can.</i>) 3. ambiguous/apathetic (e.g. <i>I sometimes feel like what I'm being asked to do in school doesn't even matter for my life or my future.</i>)
<p>Level 2: Extrinsic Motivation Extrinsically motivated students are compelled to do their work and to learn not because of any inherent value or enjoyment they see in it, but in order to indirectly fulfill an external goal or to avoid a negative consequence. Coding for level 2, extrinsic motivation, can be broken down into five main motivating characteristics to look for when coding for extrinsic motivation: 1. recognition, 2. grade, 3. competition, 4. compliance, 5. reward</p>	<ol style="list-style-type: none"> 1. recognition (e.g. <i>I'm the first person in my family to go to college, and I want to prove that I can do it.</i>) 2. grade (e.g. <i>I want to get good grades</i>) 3. competition (e.g. <i>I always wanted to be the best in the class</i>) 4. compliance (e.g. <i>My mom will ground me if I don't finish all of my homework</i>) 5. reward (e.g. <i>I'm just trying to finish up and get my degree so I can finally make some money.</i>)
<p>Level 3: Integrated Extrinsic Motivation and/or Intrinsic motivation Here, coding for intrinsic motivation is slightly more complex than simply looking for inherent enjoyment and voluntary involvement with school work or learning, and also includes tasks that are not deemed enjoyable necessarily, but are considered to be inherently valuable to the student. This latter characteristic is known as integrated extrinsic motivation. So for coding level 3, look for the follow four characteristics: 1. curiosity, 2. involvement, 3. enjoyment, 4. valuing/importance</p>	<p><i>Intrinsic:</i></p> <ol style="list-style-type: none"> 1. curiosity (e.g. <i>I've always wondered how computers were first developed, so I'm doing a project on the history of 20th century technology</i>) 2. involvement (e.g. <i>I spend all of my free time learning about the Civil War</i>) 3. enjoyment (e.g. <i>I am really excited about my bioethics classes and love the class discussions; I really just love learning and being challenged.</i>) <p><i>Integrated Extrinsic:</i></p> <ol style="list-style-type: none"> 4. valuing/importance (e.g. <i>I'm finding the chemistry courses really challenging, but I'm doing well and have a study group because I've wanted to be a doctor for a long time. My cousin died of cancer, and we were really close. I have to know chemistry if I want to contribute to improving cancer treatments.</i>)

APPENDIX L

Coding Scheme 4:

Student Self-Reported Engagement

(Lam et al., 2014, pp. 41-42)

Definitions	Examples
<p>Affective Engagement Affective engagement looks at the emotions associated with interactions between the student and their school work as well as their emotional relationship with the general school setting (which includes interactions with peers and teachers).</p>	<p><i>I am very interested in learning.</i></p> <p><i>I think what we are learning in school is interesting.</i></p> <p><i>I like what I am learning in school.</i></p> <p><i>I enjoy learning new things in class.</i></p> <p><i>I like my school.</i></p> <p><i>I am proud to be at this school.</i></p> <p><i>Most mornings, I look forward to going to school.</i></p> <p><i>I am happy to be at this school.</i></p>
<p>Behavioral Engagement Behavioral engagement is defined by a student's active and visible participation in academic, social, and extracurricular activities. This also includes positive conduct, following rules, and good attendance.</p>	<p><i>I try hard to do well in school.</i></p> <p><i>In class, I work as hard as I can.</i></p> <p><i>When I'm in class, I participate in class activities.</i></p> <p><i>I pay attention in class.</i></p> <p><i>If I have trouble understanding a problem, I go over it again until I understand it.</i></p> <p><i>When I run into a difficult homework problem, I keep working at it until I think I've solved it.</i></p> <p><i>I am an active participant of school activities such as sport day and school picnic.</i></p> <p><i>I volunteer to help with school activities such as sport day and parent day.</i></p> <p><i>I take an active role in extra-curricular activities in my school.</i></p> <p><i>I have positive interactions with my teachers.</i></p> <p><i>I have positive interactions with my classmates.</i></p>

<p>Cognitive Engagement Cognitive engagement refers to how invested a student is in their learning. It looks at how thoughtful and strategic they are in their learning, the extent to which they invest their time, and whether they persevere in order to master a skill or content knowledge.</p>	<p><i>When I study, I try to understand the material better by relating it to things I already know.</i></p> <p><i>When I study, I figure out how the information might be useful in the real world.</i></p> <p><i>When learning new information, I try to put the ideas in my own words.</i> <i>When I study, I try to connect what I am learning with my own experiences.</i></p> <p><i>I make up my own examples to help me understand the important concepts I learn from school.</i></p> <p><i>When learning things for school, I try to see how they fit together with other things I already know.</i></p> <p><i>When learning things for school, I often try to associate them with what I learnt in other classes about the same or similar things.</i></p> <p><i>I try to see the similarities and differences between things I am learning for school and things I know already.</i></p> <p><i>I try to understand how the things I learn in school fit together with each other.</i></p> <p><i>I try to match what I already know with things I am trying to learn for school.</i></p> <p><i>I try to think through topics and decide what I'm supposed to learn from them, rather than studying topics by just reading them over.</i></p> <p><i>When studying, I try to combine different pieces of information from course material in new ways.</i></p>
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APPENDIX M

Coding Scheme 5:

Teacher Perspectives on Student Motivation

(Hardre et al., 2008, pp. 176-179)

1. TFP students really try to learn.
2. TFP students work at learning new things in this class.
3. TFP students generally pay attention and focus on what I am teaching.
4. TFP students generally do class-related tasks and assignments willingly.
5. TFP students put forth effort to learn the content.
6. TFP students are often on task, and I do not have to bring them back to focus on the topic or work at hand.
7. In general, TFP students are genuinely interested in what they are asked to learn in my class.
8. When TFP students are engaged in school, it's because they see the value of what they are being asked to learn.
9. If TFP students are motivated to learn in my class, it is often because they have aspirations that connect to education, like plans to go on to college.
10. TFP students are engaged in my class because they see the relevance of the content in their world.
11. TFP students are motivated to work in school because they see how education has a place in the futures they see for themselves.
12. Generally, TFP students are interested in learning because their peers value school.
13. Most often, TFP students are working in my class because they see how useful this information can be.

APPENDIX N

Coding Scheme 6: Teacher Perspectives on Student Engagement

(Skilling et al., 2016)

Subcategory of Engagement	Examples
Affective Engagement Items	<ul style="list-style-type: none"> - <i>Interested, positive attitude</i> - <i>Says they enjoy the subject matter</i> - <i>Seems happy, excited</i> - <i>Confident</i> - <i>Increased self-esteem, enjoys attentions and/or responsibility</i> - <i>Self-motivated</i>
Behavioral Engagement Items	<ul style="list-style-type: none"> - <i>On task</i> - <i>Frequent Participation</i> - <i>Wants to answer questions</i> - <i>Wants to learn, improve, do well</i> - <i>Perseveres</i> - <i>Interacts in class and group work</i>
Cognitive Engagement Items	<ul style="list-style-type: none"> - <i>Listening well to peers and teachers</i> - <i>Improved communication with others around subject matter/school</i> - <i>Interested in trying different ways of problem solving</i> - <i>Curious, asks questions to improve learning</i> - <i>Likes to help others</i> - <i>Likes to work ahead – doing more than what is required</i>

APPENDIX O

Coding Scheme 7:

The Future Project Program Input Codes

I. Dream Team Bonding
5. Addressing students personal lives 7. Mindful reflection 8. Identifying intrinsic goals 12. Students participate for longer than 9 months 13. Peer bonding
II. One-on-One Coaching
3. Help perceiving difficult tasks as challenges, but not impossible 4. Connecting with an adult in the school 5. Addressing students' personal lives 6. Connecting student goals to school 7. Mindful reflection 8. Identifying intrinsic goals 11. Build social and emotional skills 12. Students participate for 9 months or longer
III. Group Courses and Events
1. Extracurricular work that promotes autonomy and competence 3. Help perceiving difficult tasks as challenges, but not impossible
IV. Leading and Building Projects
1. Extracurricular work that promotes autonomy and competence 2. Problem and project based learning 3. Help perceiving difficult tasks as challenges, but not impossible 5. Addressing student personal lives 6. Connecting student goals to school 9. Provide opportunities to engage with the community 10. Provide opportunities for youth recognition 13. Peer bonding 14. Peer collaboration on projects intended to positively influence the school community 15. Students proactively working with teachers and administrators on student led school improvement plans 16. Student-led, mentor (DD) facilitated

APPENDIX P

Further Findings: Interrelationship of Psychological Needs

The results, presented in Figure 16 below, show a positive relationship between autonomy attribution to The Future Project and both competence and relatedness, and a slight negative relationship between autonomy attribution and sense of autonomy. These findings determine if greater attribution of autonomy to The Future Project correlated with higher levels of any of the three psychological needs. Students' responses were grouped by level of autonomy attribution to the Future Project and their corresponding levels of autonomy, competence, and relatedness were averaged in each group.

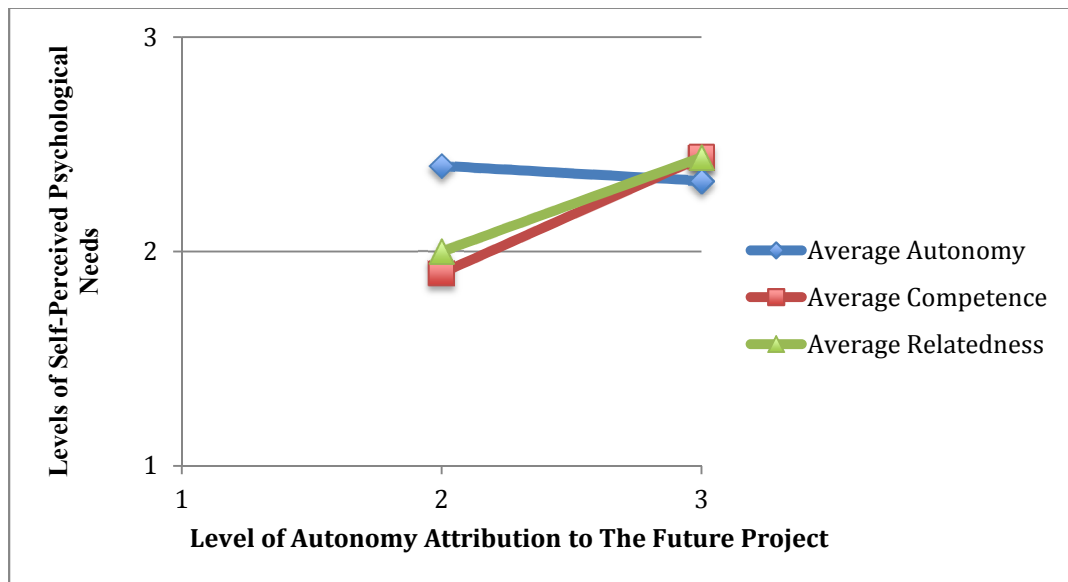


Figure 16: Attributing autonomy to The Future Project and student scores of autonomy, competence, and relatedness.

Figure 17 below, presents similar findings as Figure 16 except grouped by levels of competence attribution to The Future Project. The results show a sharp increase in sense

of competence with even a moderate level of competence attribution to The Future Project, and only minimal further benefit with a high level of attribution to The Future Project. Competence attribution to The Future Project has a small positive relationship with sense of relatedness, and a steadily negative relationship with sense of autonomy.

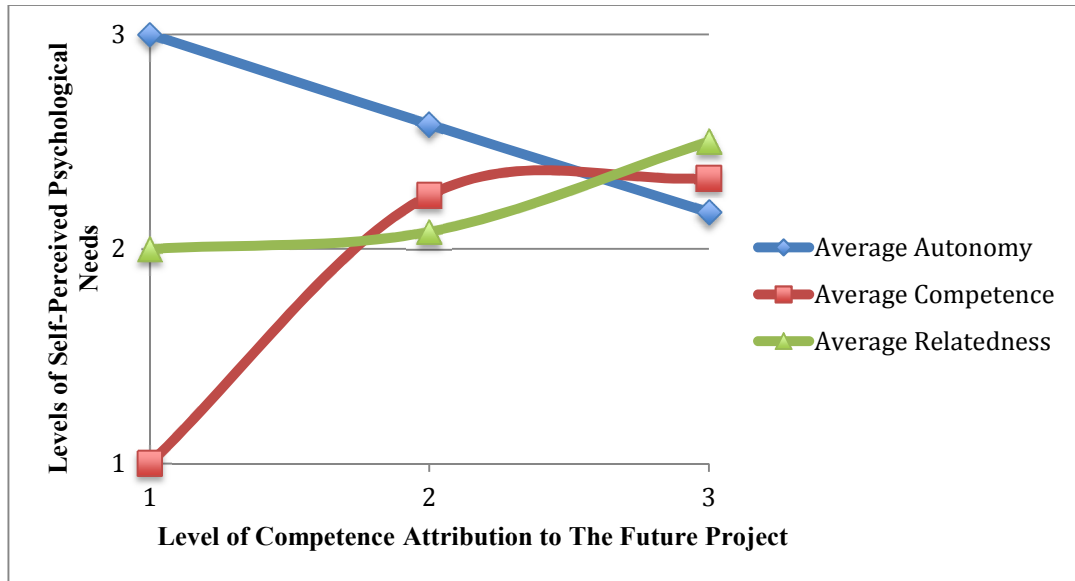


Figure 17: Attributing competence to The Future Project and student scores of autonomy, competence, and relatedness.

Again similar to Figures 16 and 17, Figure 18 groups students according to level of relatedness attribution to The Future Project and then compared the corresponding grouped averages of student self-reported autonomy, competence, and relatedness. All three psychological needs showed a small but positive increase as relatedness attribution to The Future Project increase. The trends do not appear to be linear, however, for competence or relatedness. Competence was comparable for low (level 1) or moderate (level 2) attribution to The Future Project, and slightly increased when there was a high

level of relatedness attribution (level 3) to The Future Project.

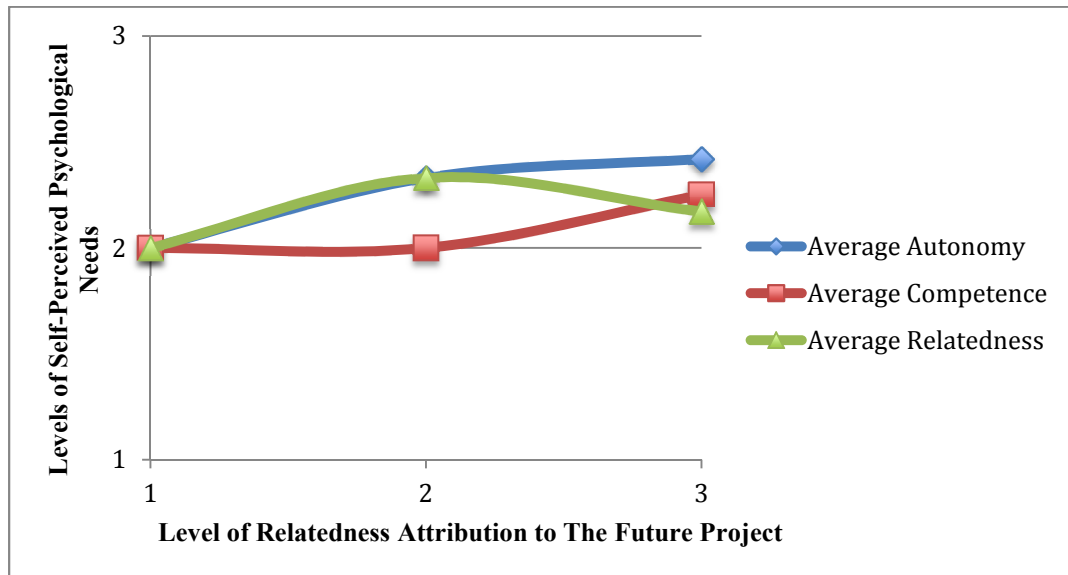


Figure 18: Attributing relatedness to The Future Project and student scores of autonomy, competence, and relatedness.