RELATE TO MOTIVATE: AN INVESTIGATION OF AN ONLINE INTERVENTION GEARED TOWARD INCREASING MOTIVATION AND COLLEGE AND CAREER READINESS IN STUDENTS FROM BACKGROUNDS OF POVERTY

By
Natalie R. W. Duvall

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ABSTRACT

Students from low socioeconomic statuses are faced with a double bind. Not only are they often in settings with limited resources, but they face an academic achievement gap from their wealthier peers which often keeps them from advancing out of their situations. As discovered in a needs assessment completed at a private residential school serving students from backgrounds of poverty, students do not lack academic motivation. However, the literature indicates that students in poverty are often stifled by obstacles not found in the lives of their middle and upper class peers. Many times these students do not have workable goals and usable perceptions of their future selves. Additionally, it is common for students in low socioeconomic statuses to misinterpret obstacles as signs of failure.

While a motivational theory like the Self-Determination Theory might be enough when used with students from higher socioeconomic situations, when the complications of the socioeconomic achievement gap is factored in, extra tools are needed. The Self-Determination Theory discusses how to get a student motivated, but it doesn’t address the needs students have once they are motivated to overcome things like the aspiration/expectations gap. To help students merge their aspirations and expectations, they need to utilize Possible Selves Theory to help spur them toward achievement. However, students in this demographic need more than just hoped-for or feared possible selves, they need help creating strategies to make their goals a reality. For that reason, mental contrasting, which stems from Fantasy Realization Theory, is one potential strategy method. Thus these three theories are the basis for this dissertation’s intervention.
In an attempt to discover one way to offset these obstacles, this researcher created an online intervention that not only had students respond to prompts about possible future goals, but receive change-oriented feedback from teachers. This four-week, mixed methods, quasi-experimental study used convenience sampling to analyze the impact the aforementioned intervention on student success indicators. Quantitative data was derived from pre- and post-tests gauging motivation, feelings of competence, and perceptions of future selves. Teacher measures were focused on perceptions of students and teacher efficacy. Additionally, the researcher derived qualitative data from students’ and teachers’ written responses as well as two focus groups.

Though the sample was small, this intervention showed a significant impact on students’ perceptions of future selves. Additionally, statistical significance was found in relationship to students’ feelings of competence and future success. Qualitative analysis then suggested that this intervention has the potential to positively increase students’ college and career readiness and success. The researcher believes that data indicates the usefulness and applicability of this intervention in the goal to negate some of the obstacles that lead to the achievement gap. Future research should seek to eliminate the limitations associated with the pilot nature of this program while it is utilized in various settings and situations.

Adviser: Dr. Ranjini Mahinda JohnBull
Committee Member: Dr. Yolanda Abel
Committee Member: Dr. Christine Eccles
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CHAPTER 1 – EXECUTIVE SUMMARY

Achievement gaps exist between students from low socioeconomic statuses (SES) and those from higher statuses, as well as between minority students and non-minority, or White, students (Lee & Orfield, 2006). Gaps also exist within specific content areas and by gender – girls achieve better in reading while boys do better in math and science (Dee, 2007) – and within ethnic subgroups (Carpenter, Ramirez, & Severn, 2006). This dissertation specifically deals with the gap between students from low socioeconomic statuses (SES) and their more advantaged peers, which is a gap that has perpetuated for decades (Gamoran & Long, 2007; Lareau, 2011; Rury & Mirel, 1997) since Equality of Educational Opportunity was first published (Coleman et al., 1966). In fact, socioeconomic status has the most significant impact on achievement gaps, with this characteristic driving a bigger gap than ethnicity or gender (Bohrnstedt, Kitmitto, Ogut, Sherman, & Chan, 2015). Students from backgrounds of poverty often have lower access to higher level academic courses (Burris & Welner, 2005) and are more likely to be viewed as low performers, as needing special education support, or as lacking in academic ability (Becker & Luthar, 2002). Linda Darling-Hammond (2004) even suggested these students were blamed for the gap. As a possible result of these negative perceptions, many students from backgrounds of poverty are losing their interest in academics (Becker & Luthar, 2002). When students are not interested in education, motivation can disappear (Ryan & Deci, 2000). That presents a problem for academic and life success.

Motivational Theory and Academic Outcomes
Motivation is a construct discussed in multiple educational theories, from Skinner’s behaviorism to modern ideas of social constructivism. Though the issue of locus of motivation is debated between theories, all agree motivation can be defined as the desire or reason for action or movement. As Ryan and Deci plainly stated, “…motivation is highly valued because of its consequences: Motivation produces” (2000, p. 3).

Motivation is a better predictor of academic success than ability (Kappe & van der Flier, 2012), and this dissertation focuses on utilizing motivation to combat the achievement gap. Specifically, this paper is grounded in the Self-Determination Theory’s (SDT) definition of motivation (Deci, Vallerand, Pelletier, & Ryan, 1991). This theory is appropriate for this research context because it incorporates one of the key factors that has been shown to help students from low SES combat achievement obstacles/challenges: a connection with a supportive adult. SDT is also a good fit because it focuses on more than just intrinsic motivation, which is not always practical in secondary education (Ryan & Deci, 2000). SDT demonstrates concrete ways to improve self-regulated motivation, or a person’s ability to control and decide their own motivations, which is key to helping students maintain motivation in post-secondary school. Thus, for the purposes of this dissertation and the rationale described above, Self-Determination Theory was chosen as the theoretical framework through which this problem of practice was explored. The rationale for selecting this theory will be further explained in the following chapters.

As a basis for increasing motivation and academic output, applications of SDT tenets in educational settings have been very successful (Reeve, 2012). Yet most research investigating the three key aspects of this theory do not focus on low-income
high school students (De Naeghel, Van Keer, Vansteenkiste, & Rosseel, 2012; Jang, Reeve, Ryan, & Kim, 2009; Reeve, 2012; Williams & Deci, 1996). These students differ from their wealthier peers in that they often see struggle as a sign of failure (Oyserman, Gant, & Ager, 1995). Additionally, they do not easily access strategy creation skills (see this paper’s Needs Assessment), and, on average, do not have workable visions of future selves that can help overcome these two issues (Oyserman et al., 1995). To have a workable perception of one’s future self means to have a positive outlook for the future while realizing the potential for negative outcomes, without allowing that negativity to cripple forward movement (Cadely, Pittman, Kerpelman, & Adler-Baeder, 2011; Oyserman et al., 1995; Oyserman, Bybee, & Terry, 2006; Yowell, 2002). For this reason, the dissertation also incorporates Fantasy Realization Theory to address the issue of obstacle strategies (Oettingen, 1999) and possible selves theory stemming from self-concept theory (Markus & Nurius, 1986)

**Problem of Practice**

To look at this situation in depth, the author began a research study at a private residential school serving students from backgrounds of poverty – heretofore referred to as the Dairy School. For the purposes of this dissertation, poverty is defined as 150% the federally defined poverty level. For 2015, that means a family of four would earn no more than $36,375 (Burwell, 2015). As the needs assessment found in Chapter 3 explicates, students of poverty do not lack for academic motivation, and many report having positive academic support from family and coaches and advisers. Yet, in terms of school completion at both the high school and collegiate level, students from low SES backgrounds often struggle with issues not faced by their wealthier peers. Many students
of poverty see struggles, like not passing a class, as signs of failure (Balfanz, Herzog, & Mac Iver, 2007). When faced with financial and social obstacles, many students from poverty are unable to sustain academic achievement (Wyner, Bridgeland, & DiIulio Jr, 2007). Additionally, students from urban poor areas have experienced or witnessed so much trauma, that the obstacles they perceive on the path to success are related to such things as death (Galea, Ahern, Nandi, Tracy, Beard, & Vlahov, 2007). The author hypothesized that one way to help combat this gap would be to create an intervention that employed practices based upon motivational theory principles to overcome these barriers.

**Intervention Basis and Creation**

The pilot intervention detailed in this dissertation utilized a combination of principles from SDT while trying to combat the often-found deficits in building workable strategies to overcome perceived obstacle and actionable future selves. The program spanned a four-week time frame and use quantitative and qualitative research methods to analyze the effectiveness.

The foundation of the intervention was based upon research that showed that four weeks of writing about one’s future self led to increased autonomy, competence, and happiness (Layous, Nelson, & Lyubomirsky, 2013), which aligned with the core principles of SDT. The same study found that the use of testimonials improved results; therefore, this feature was included in the intervention. Additionally, since the aforementioned study and others found that online interventions with possible selves were just as successful as in-person ones, this intervention utilized an online portal (Layous et al., 2013; Ravert, Gomez-Scott, & Donnellan, 2015). The author designed the
software and it was programmed by her husband, a PhD student in education. The design included other facets as follows.

To address the issue of obstacle strategy creation, this intervention employed the work of Gollwitzer, Oettingen, Kirby, Duckworth, and Mayer (2011), which noted that simply thinking about possible obstacles increased student performance in students of all mental and academic capabilities. Thus, the prompts in the software asked students to think about future scenarios as well as potential obstacles.

As the keystone that holds the aforementioned facets together, the researcher incorporated teacher-provided change-oriented feedback. When this type of feedback is done correctly, which means offering choices, appearing non-judgmental, and listing actionable corrections and tips (Carpentier & Mageau, 2013) is as is important in helping students develop strategies for overcoming obstacles. Positive feedback alone, given when a student is struggling, may lead to false feelings of competency and stall growth (Hattie & Timperley, 2007). Change-oriented feedback, however, when aligned to goals and given in a timely manner, can successfully aid motivation (Carpentier & Mageau, 2013). This type of feedback is corrective feedback, and it must be delivered in the before-mentioned ways to be successful (Carpentier & Mageau, 2013). To facilitate this, this intervention used guided response stems to scaffold change-oriented teacher feedback from study participants. This was done to supplement the limited training teachers received within the short intervention period.

**Major Conclusions**

Quantitative analysis revealed that students who completed the intervention developed better perceptions of positive future selves than students who did not.
Additionally, these students felt more confident in their abilities and capacity to succeed after graduation. Additional qualitative research indicated that both students and teachers found value in the intervention. Students reported the program helped them think about things they would not have before and hear things they needed to hear. Adults found the intervention to be a unique and helpful way to guide students through struggles they had not known students were prone to have. They also liked that it gave them time and space to think about the best way to respond to students – which does not always happen within the constraints of the teaching day. The software design and execution was practical and efficient, and both students and teachers were pleased with the online nature of the program.

Recommendations

From this study, this program’s potential value is clear. Now that the pilot implementation has been evaluated, the software should be explored in larger settings with the affordances of more time and a larger population. This would better enable an investigation of the program’s impact on academic outcomes and also enable researchers to see if the findings could be replicated. The software has the ability to be tailored to individual settings, so its applicability is not limited to k-12 schools, but could also be used in online school settings, and at the collegiate level to help prevent the attainment gap. It can be used to serve mentoring programs, bridge programs, remedial programs, or whole-group populations. Additionally, it can serve as a model for both qualitative and quantitative evaluation of intervention programs with the use of its internal record keeping.
CHAPTER 2 – INTRODUCTION OF THE PROBLEM OF PRACTICE

The achievement gap between students of poverty and their wealthier peers has been a great educational concern since the “Equality of Educational Opportunity” report (Coleman et al., 1966) was published. According to the Census Bureau (DeNavas-Walt, Proctor, & Smith, 2010), 44 million people lived in poverty in 2009. That percentage is not spread evenly across all races. White American poverty rates are 12.3%, with Black and Hispanic Americans over twice that rate at 25.8% and 25.3%, respectively. The impact of this White/Black/Hispanic socioeconomic discrepancy on schools is further exacerbated when examining the increase of poverty in families with children under the age of 18. In 2006, 11% of White families were at or below the poverty level, whereas 29% of Black families lived at the same level (DeVoe & Darling-Churchill, 2008). When translated into numbers, in 2013, of the over 24 million children in the United States, 10.9 million were living in low-income households (Jiang, Ekono, & Skinner, 2015). Demographically, that breaks down as shown in Figure 1

Figure 1

Students in Poverty by Ethnicity
The achievement gap has been tied to socioeconomic backgrounds since the mid-twentieth century (Coleman et al., 1966) and continues through today (Gamoran & Long, 2007). Yet data from the 1990’s until 2009 shows that low-income White people live in neighborhoods with more and better social-economic advantages (Reardon, Fox, & Townsend, 2015). Reardon, Fox, and Townsend (2015) discovered that community context was markedly different along ethnic lines, even when controlling for economic disparity. It is not difficult to see this translate into educational outcomes.

Perie, Moran, and Lutkus (as cited in Gamoran & Long, 2007) noted that there was a 27-point gap between Black student achievement and White student achievement in 2004. The National Center for Educational Progress (U.S. Department of Education, 2012) reports White 17 year olds not eligible for the National School Lunch Program perform higher than Black and Hispanic students of the same SES on reading assessments. Even more significantly, those same White students out-perform all students from low SES at an even greater rate. Researchers have discovered similar
findings for the last several decades: students from low socioeconomic backgrounds do not achieve at the same level as their wealthier peers (Lareau, 2011; Rury & Mirel, 1997). For these reasons, when discussing the socioeconomic education gap, this paper will also deal with ethnic considerations as it evaluates the situation.

**Underlying Factors of the Socioeconomic Achievement Gap**

Several different elements contribute to this achievement gap. While the various reasons are many and complicated, the following section will detail a few of the most prominent. While in no way meant to be an exhaustive list, these aspects highlight the disparity in education.

**Limited Access to Rigorous Academics or Culturally-Integrated Resources**

The effect of poverty on education and its outcomes is multifaceted. Most educational resources are devoted to the highest socioeconomic statuses (SES), with low SES students receiving the least resources (Darling-Hammond, 2004b). Students from low SES are unequally placed in low academic tracks; students from backgrounds of poverty only have a one in two chance of placement in academically high classes (Burris & Welner, 2005). Within classroom settings, values are typically created from a White, Eurocentric perspective (Howard & Terry, 2011; Stevens, Olivárez, & Hamman, 2006).

**Lowered Expectations**

Students from backgrounds of poverty are more likely than their wealthier peers to have lower expectations of future success, have fewer opportunities to learn, and be exposed to negative messages about their abilities to succeed in academic realms (Becker & Luthar, 2002). Social status and ethnicity can sway teacher perceptions of and expectations for students (Becker & Luthar, 2002). This has been shown to decrease
students’ academic interest and determination, and in turn self-efficacy, or feelings of confidence in one’s abilities (Stevens et al., 2006). It can also disengage students from the learning process (Howard & Terry, 2011). Also compounding this issue is the increased negative effects on certain students of color; Black boys, especially, are the victims of low teacher expectations, and Hispanic students receive less praise and success than their White peers (Stevens et al., 2006). Despite these inherent educational inequities, students who fail are blamed for their own failure (Darling-Hammond, 2004b). This blame could manifest as criticizing students for not working hard enough or having the motivation to stick with school work. In general, through failings of teacher education programs or political support systems, schools and teachers are ill-prepared to support the increasing number of students of color and poverty (Gamoran & Long, 2007; Gay, 2002; Haberman, 1991).

**Poor Perceptions of Future Selves and Limited Strategy Awareness**

A major predictor of scholastic success is a child’s future aspirations (Yowell, 2002). Schools who serve America’s disadvantaged youth often try to inspire students toward success. This includes hanging up college banners or posters featuring testimonials from successful adults. However, this type of positive messaging rarely works in pushing students toward successful behaviors and strategies (Duckworth, Kirby, Gollwitzer, & Oettingen, 2013). When compared to their more economically advantaged peers, students from low SES have lower expectations and aspirations for their future success (Cook et al., 1996; Yowell, 2002). Even though students from disadvantaged backgrounds see their career aspirations increase as they move through elementary and
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into middle school, the gap between their aspirations and expectations is quite dramatic (Cook et al., 1996). As Cook and colleagues put it,

…schools and the media present all children of color with same-race models of high achievement; they teach that preferential treatment is sometimes given to minorities for college admissions and entry into some jobs; and minority children are frequently exhorted not to aspire too low and so sell themselves short. But… as early as second grade the poorer African-American boys’ expectations and aspirations reflect the realities in the world the boys see around them. They do not see an unconstrained world of occupational choices… (1996, pp. 3381-3382).

When students advance through their school years, they are surrounded by positive messages of their ability to succeed. Unfortunately, because the reality they often see around them does not match with these messages, their expectations fall far short of their hopes and dreams.

Lack of School Engagement

Students who are interested and find value in a task are motivated to achieve (O'Keefe & Linnenbrink-Garcia, 2014). Positive emotions stemming from a student’s interest in school boosts achievement scores (You & Kang, 2014). Students from diverse backgrounds become engaged in school when they feel their backgrounds and lives are taken into consideration (Howard & Terry, 2011). When engagement lacks, the opposite is true. One example is Yowell’s (2002) study, which looked at school engagement as a risk factor contributing to a student’s likelihood of dropout. Within school engagement lie several factors that can underwrite the socioeconomic achievement gap. Seeing that low engagement was a factor in scholastic success and personal decision making – like
drug use and teen pregnancy -- Caraway, Tucker, Reinke, and Hall (2003) conducted a study to see what reasons contributed to lowered engagement.

Using 123 students ranging in age from 13 to 19 at an urban school, they collected demographic information, school attendance data, English, math, and science grades as well as several self-report scales: (a) self-efficacy, (b) goal orientation, (c) test anxiety, (d) fear of failure, (e) social desirability, and (f) school engagement. Of these students, two thirds were White and the majority were in ninth grade.

What the researchers found was that self-efficacy was correlated with GPA and engagement at the .01 level, and engagement at the .05 level (Caraway et al., 2003). Goal orientation was significantly connected to engagement ($r = .38, p < .01$). In addition, through multiple regression analysis, they found that GPA was predicted by test anxiety ($t = -2.68, p < .01$) and self-efficacy ($t = 2.44; p < .05$). These findings support their hypothesis that students with higher feelings of competence will do better in school and likewise be better engaged. Unfortunately, as mentioned earlier in this chapter, student efficacy is compromised by lowered expectations.

**Diminished Student Motivation**

Not only is school engagement predictive of academic achievement, it is predictive of academic motivation (Wang & Eccles, 2013). In addition to, or in connection with lowered school engagement, negative perceptions and damaging surroundings of disadvantaged students lead to a vanishing interest in academics (Becker & Luthar, 2002). A history of systematic discrimination has caused students to believe that school does not matter (Becker & Luthar, 2002), while a lack of realistic and relatable examples makes students feel that education cannot positively affect students in
their situations (Mickelson, 1990). When students do not believe in the importance or relevance of school, it causes academic motivation to become non-existent (Ryan & Deci, 2000b).

Liu (2016) studied motivation and other non-cognitive skills’ interaction with achievement. Non-cognitive skills in this study were classified as things such as perseverance, self-discipline, and focus. For the study, Liu looked at longitudinal data from over 14,000 students in grades K-5. Specifically in terms of math scores, she found that a one standard deviation improvement in non-cognitive skills improved math achievement every year from kindergarten to fifth grade. Reading scores mimicked these findings.

In addition to analyzing the connection between achievement and non-cognitive skills, she analyzed how socioeconomic status and non-cognitive skills interacted (Liu, 2016). By again looking at math and reading scores, Liu found that 14-16 percent of the achievement gap between the top and bottom quintile of socioeconomic status is due to non-cognitive skills. Additionally, an increase in non-cognitive skills, by one standard deviation, has a bigger impact on achievement than one standard deviation of socioeconomic status. However, students from higher SES families enter kindergarten with higher levels of non-cognitive skills (Liu, 2016)

Taken together, students of poverty face many challenges that hinder academic motivation. The concept map in Figure 2 demonstrates the connections between these underlying factors and motivation.

Figure 2

*The Poverty Funnel to Low Motivation*
Theories Addressing the Underlying Causes of the Achievement Gap

Multiple theories may address these underlying factors, so to select applicable ones for this dissertation’s topic, the author looked first to the model of successful learners from low SES backgrounds and found three specific and personal attributes that aid students’ abilities to achieve academic success: (a) internally regulated academic motivation (Cohan & Honigsfeld, 2013; Ryan & Deci, 2000; Shumow & Schmidt, 2013), (b) workable perceptions of future selves from Possible Selves Theory/Self-Concept Theory (Lamb, 2011; Leondari, Syngollitou, & Kiosseoglou, 1998; Sheldon & Lyubomirsky, 2006), and (c) strategies for overcoming obstacles from Fantasy Realization Theory (Duckworth et al., 2013; Oettingen, Stephens, Mayer, & Brinkmann, 2010). Students whose behavior is controlled by external forces are less likely to complete school (Deci et al., 1991). Those who do not have workable visions of possible selves have lower grades and negative attitudes about academics (Cadely et al., 2011).
Finally, when students have no conception of ways to overcome obstacles, they are less likely to succeed on scholastic tasks, despite their ability (Gollwitzer et al., 2011).

This section will explore the literature related to the items mentioned above. In addition, it will describe the measures of achievement that will be used throughout this dissertation. By the end of the chapter, the connection between the causes of the socioeconomic achievement gap and applicable theories that researchers can use to apply to these problems. Additionally, it will set up the basis for the needs assessment that was performed and detailed in the following chapter.

Definitions of Student Achievement

To begin the analysis of applicable theories, one must first define the way in which achievement is measured and analyzed in this dissertation. The most common constructions of student achievement look at scholastic performance (Mickelson, 1990). This is usually defined as GPA (Duckworth et al., 2013; Leondari et al., 1998) and/or standardized test scores (Liu, 2016; Oyserman et al., 2006). Behavior, attendance, and time on task have also been used to demonstrate achievement (Duckworth et al., 2013; Leondari et al., 1998; Oyserman et al., 2006). Additionally, and especially for students from backgrounds of poverty, academic achievement is also defined through college and career success (Dymnicki, Sambolt, & Kidron, 2013). The main theory of motivation, as detailed below, has the ability to affect all of these achievement indicators.

The Self-Determination Theory

The following sections will trace the roots and creation of Self-Determination Theory (SDT) by first exploring the development of motivation theories. It will then explore SDT as applied to education while also defining and exploring, in detail, key
constructs of the theory. Several studies will be explored to explicate the relationship between SDT and the socioeconomic achievement gap.

**A Brief History of the Development of Theories of Motivation.** Various learning theories acknowledge motivation as a key aspect of scholarship (Deci et al., 1991; Gollwitzer et al., 2011; Markus & Nurius, 1986; Maslow, 1943; Skinner, 1975). For example, Skinner’s (1975) behaviorism demonstrated that extrinsic motivation is able to produce learning and knowledge retention. Alternatively, cognitive theorists (Bandura, 1986; Bruning, Schraw, & Norby, 2011) and constructivists (Ernest, 2010; Von Glasersfeld, 1996) also described intrinsic motivation and goal setting as essential elements for effective learning. The Self-Determination Theory believes that both extrinsic and intrinsic motivation are tools for a successful education – when internally regulated by the learner (Deci et al., 1991; Ryan & Deci, 2000; Ryan & Deci, 2013).

**The background that led to Self-Determination Theory.** Up until the 1940’s, there were two main schools of thought about why people were motivated to do something (Pink, 2011). Maslow’s (1943) motivation theory attributed motivation to the desire to fulfill human’s homeostatic drives, or the desire to maintain internal physical balance and stability. In other words, children return to their houses in the evening because they are cold, or they sit nicely at the table because they are hungry and want fed. Behaviorism claimed people performed specific actions because of their desire to gain rewards or avoid consequences, or due to extrinsic motivation (Skinner, 1975). For example, a child might avoid the neighbor’s house because of a dog who barks, or they might frequent the neighbor’s house because they give them ice cream.
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The rhesus monkey watershed experiment. In the midst of these two theories came an experiment done with rhesus monkeys and a mechanical puzzle apparatus (Harlow, Harlow, & Meyer, 1950). The study discovered that monkeys’ natural curiosity drove them to solve the puzzle, even without the reward of food (behaviorism) or the desire to find normalcy in their environment (homeostasis). Harlow and his colleagues wrote, “Drives of this class represent a form of motivation which may be as primary and as important as the homeostatic drives” (1950). From this study, the idea of intrinsic motivation began (Pink, 2011).

Edward Deci and the creation of the Self-Determination Theory. Two decades after Harlow (1950), Deci (1971) began a paper by asking the question, “If a boy who enjoys mowing lawns begins to receive payment for the task, what will happen to his intrinsic motivation for performing the activity?” (Deci, 1971) Having noticed some flaws in Harlow and colleagues’ research, Deci (1971) crafted an experiment that tested the theory of motivation and rewards. He had two significant findings: (a) money did not aid motivation but (b) social rewards encouraged it. Deci’s explanation was that people saw money as controlling, but did not see social encouragement the same way. Deci continued to explore the connection between regulation, the locus of control, and motivation, which led to the development of the Self-Determination model of motivational theory (Deci et al., 1991). Whereas other theories of motivation deal with the process of driving toward a goal, SDT goes one step further and examines why students want to drive toward the goal (Deci et al., 1991) by looking at how internally regulated motivation is.
To do this, SDT looks at self-regulated motivation as created and supported by three constructs, (a) autonomy, (b) competence, and (c) relatedness. The theory posits that there are three types of motivation: (a) amotivation, (b) extrinsic, and (c) intrinsic, which four levels of extrinsic motivation based on the level of regulation. These ideas will be explained in more detail in the next section and later in this chapter.

*Self-Determination Theory applied to education.* Rising from the groundwork of social cognitivism, which incorporates the idea that people can learn by observing others (Bandura, 1986), SDT separated itself from other theories of motivation by differentiating between intentional behaviors that were controlled by external forces from those that were driven by internal self-regulation (Ryan & Deci, 2000). Noting that successful school systems were ones which guided and inspired student engagement and motivation, Deci et al. (1991) developed and enhanced Self-Determination Theory to apply to the world of education. Like social cognitivists, they believed that learners act with and through a connection to society, and added that three things are needed to create well-rounded, socially responsible and highly skilled learners: (a) independence and self-rule, (b), positive feelings of self and (c) an active connection to others in society. When used as a practical application of social cognitivism, SDT was found to be useful in understanding both the importance of academic motivation in students and becoming aware of ways to ensure it exists in today’s classrooms. That is why, in 1991, Deci and colleagues restructured their three human needs to align more closely with students. These needs became labeled (a) autonomy, (b) competence, and (c) relatedness.

*Self-Determination Theory: Components, constructs, and beliefs.* Within schools, Deci and colleagues (1991), saw the three types of motivation in action and
could predict which students would be more academically successful based on the type of motivation they demonstrated. Figure 3 illustrates this. In schools, an amotivated student is one who teachers would say does not care about school. He or she does not turn assignments in or work in class. The extrinsically motivated student does work perhaps because their teacher tells to, or perhaps because their parents will ground them if they do not, or perhaps because if they do not they will be ineligible and not able to play sports. The intrinsically motivated student does work for the joy they feel upon completing it. This looks like an English student who always completes her assignments because one of her favorite activities is reading.

Figure 3

*Self-Determination Theory and Motivation*

The best of these three, intrinsic motivation, naturally occurs in children, however, modern schools seem to be counterproductive to this (Ryan & Deci, 2013) or ill-suited for it, especially at the secondary level (Ryan & Deci, 2000; Ryan & Deci, 2000b).
The Self-Determination Theory continuum. Ryan and Deci (2000b) found that students who are intrinsically motivated are happier, more eager to work, and more confident about their ability to achieve. However, the secondary school system is not designed in a manner supportive of intrinsic motivation. As Ryan and Deci (2000) pointed out, intrinsic motivation is the result of finding something enjoyable. Many things secondary school teachers ask students to do are not pleasurable activities students would choose to do on their own. Because of that, it is important that educators identify ways to harness the power of extrinsically-regulated motivation.

SDT identifies three types of motivation, (a) amotivation, (b) extrinsic motivation, and (c) intrinsic motivation. Ryan and Deci (2000) placed these in a continuum from least regulated motivating factor to most regulated, as was shown in Figure 3.

On the left side of the continuum is amotivation, the complete absence of motivation. An amotivated student does not find value in academic work. In terms of regulation, none exists. Extrinsic motivation is in the middle of the band. External forces regulate this type. On the right sits intrinsic motivation, which is regulated from within. The intrinsically motivated student produces because they find inherent enjoyment in the task.

At the center of that the continuum, extrinsic motivation can be nearly as effective as intrinsic in academic settings, if it is internally regulated (Ryan & Deci, 2000). In other words, a student who does not want to do homework but does it because he sees its value to her career goals will produce better work than a student who does her homework because she merely wants to avoid getting grounded. To portray the difference between
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externally and internally regulated motivation, Ryan and Deci (2000; 2000b) created four categories of extrinsic motivation, as shown in Figure 4.

Figure 4

*Locus of Control and Types of Extrinsic Motivation*

<table>
<thead>
<tr>
<th>Perceived Locus of Control</th>
<th>Type of Extrinsic Motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controlled</td>
<td>• External Regulation</td>
</tr>
<tr>
<td>Somewhat Controlled</td>
<td>• Introjected Regulation</td>
</tr>
<tr>
<td>Somewhat Autonomous</td>
<td>• Identified Regulation</td>
</tr>
<tr>
<td>Autonomous</td>
<td>• Integrated Regulation</td>
</tr>
</tbody>
</table>

On the left hand side is *external regulation*. This motivation is the only one acknowledged by behaviorists (Ryan & Deci, 2000b). Students who operate under this kind of motivation feel controlled. The other externally regulated extrinsic motivation is *introjected regulation*. This motivation makes the doer feel pressured to perform in order to feel self-worth. Moving into self-regulated extrinsic motivation is *identified regulation*. In this case, the student recognizes with the importance of the task. Finally, the most internally regulated external motivation is *integrated regulation*. A student operating in this arena is doing because a student realizes the end justifies the means, even if they do not find it inherently valuable. For a breakdown of how this might appear in a secondary classroom, see Table 1.
Table 1

Appearance of Intrinsic Motivation Within the Classroom

<table>
<thead>
<tr>
<th>Task</th>
<th>Learning the Proper Way to Use a Semicolon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Extrinsic Motivation</td>
<td>External</td>
</tr>
<tr>
<td>In the Classroom Looks Like</td>
<td>Completes semicolon worksheet at the very last minute so that they do not fail English class and go to summer school.</td>
</tr>
</tbody>
</table>

Facilitating change in intrinsic motivation components, constructs and beliefs.

As Otis, Grouzet, and Pelletier noted, motivation is not set in stone (2005). SDT posits that change in academic motivation can occur through the facilitation of the three basic needs of perceived autonomy, competence, and relatedness. Table 2 shows Deci and colleagues’ (1991) requirements for facilitating changes in these basic human needs that contribute to motivation. While there are many possible change agents within these three constructs, the next few examples are a demonstration of some possible causes. Within these, one might also be able to see how some of these change agents can overlap.

Autonomy. Students who feel like they are controlled by teachers and their school suffer a lack of motivation. Classrooms in which teachers allow students choice in how to demonstrate content knowledge and/or validate a student’s dislike of a specific assignment can counteract this drop in motivation.
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Competition. A student who receives poor test scores suffers from low feelings of competence. A teacher might boost the student’s efficacy by providing him with constructive, non-judgmental feedback on ways to improve his scores. He also might feel more competent when seeing another student in his situation earn good grades.

Relatedness. When students feel alone or uncared for in the school system or setting, they do not feel a desire to complete academic activities. By connecting with a teacher or another mentor in the school, a student is more likely to want to work on school assignments and do well.

Table 2

SDT’s Basic Human Needs and Possible Change Agents

<table>
<thead>
<tr>
<th>Basic Human Need</th>
<th>Possible Change Agent</th>
</tr>
</thead>
</table>
| Competence       | • Change-Oriented Feedback<sup>a</sup>  
|                  | • Vicarious Experiences<sup>b</sup>  
| Autonomy         | • Allowing Choice in Task Completion  
|                  | • Acknowledging When Students Do Not Like an Assigned Task  
| Relatedness      | • Personal Connection to Teachers and Family  

Note: Change agents derived from <sup>a</sup>Carpentier and Mageau’s (2013b) interpretation of positive, autonomy supportive feedback (Deci et al., 1991), <sup>b</sup>Bandura (1977). The others come from SDT.

Student motivation and poverty. It is not that high school students lack motivation. All educators have experience with students who have no desire to read a novel or complete a chemistry lab, but go faithfully to the basketball court to practice every day. Kane (1987) attributed lack of career-minded motivation in people living in poverty to the circumstances and intricacies of poverty. He suggested that those in poverty lack control of their situations. This is supported within the constraints of SDT.
as Deci et al. (1991) noted that lack of autonomy undermines internally regulated motivation.

In school settings it is possible that the stress of poverty and academically unsupportive home communities also undermine motivation (Battistich, Solomon, Kim, Watson, & Schaps, 1995). When students do not have access to cognitively stimulating home environments, they are less likely to be academically motivated (Gottfried, Fleming, & Gottfried, 1998). Students in poverty are likely to be without access to educationally-supportive events, media, and tools, so the facilitation of internally regulated academic motivation is stymied (Gottfried et al., 1998).

The issue is that the appearance of student motivation, as operationalized by Farkas, Grobe, Sheehan, and Shuan (1990) as homework, participation, effort, and organization, is more closely predictive of grade than cognitive abilities. Thus, in order to achieve, students must not only be motivated to achieve, they must appear motivated to achieve. In the context of poverty, this is especially difficult, since findings indicate that for the most disadvantaged students poverty is negatively connected to student outcomes like motivation (Battistich et al., 1995).

**Factors that hinder motivation.** Ryan and Deci (2000) stated people are naturally motivated, even as infants. But motivation, especially the intrinsic kind, can be easily crushed or deterred. Academic motivation commonly decreases as students progress into and through high school. Otis, Grouzet, and Pelletier (2005) found this to be the case in every form of motivation discussed by the Self-Determination Theory. They believed this was due to teenagers becoming more devoted to social and athletic activities as they age. Additionally, it is difficult to change motivational acclimations for
students out of elementary school (Vazou, Gavrilou, Mamalaki, Papanastasiou, & Sioumala, 2012).

Many teachers might be inclined to aid motivation by offering rewards. From star charts to scholarships, almost every school has some sort of reward system in place. Yet not all rewards work the way teachers and school systems want them to work. Rewards and punishment cause compliance (Shumow & Schmidt, 2013), yet that does not foster future learning. In fact, certain types of rewards, such as money, decrease intrinsic motivation (Deci, 1971)

Motivational influences in students of poverty. Many external and internal issues can develop or hinder motivation in students from low SES. Many of these factors stem from the three constructs found within SDT: (a) autonomy, (b) competence, and (c) relatedness. Table 3 details these three constructs and possible negative consequences when they are poorly developed or non-existent. The following sections will more explicitly detail these concerns.

Table 3

Negative Consequences of Neglected Needs -- SDT

<table>
<thead>
<tr>
<th>Motivational Construct</th>
<th>Possible Negative Consequences When Factor is Neglected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autonomy</td>
<td>• Feelings of Anxiety</td>
</tr>
<tr>
<td></td>
<td>• Inability to Cope</td>
</tr>
<tr>
<td>Competence</td>
<td>• Lack of Goal Motivation</td>
</tr>
<tr>
<td></td>
<td>• Low Self-Esteem</td>
</tr>
<tr>
<td>Relatedness</td>
<td>• Lowered Aspirations</td>
</tr>
</tbody>
</table>
Autonomy. Students need to feel their actions are self-determined, or autonomous, to be motivated (Ryan & Deci, 2000). When students feel controlled they are less likely to be motivated to perform. And, even though teachers believe hard work and effort are more important than cognitive abilities, the nature of how schools deal with these issues undermines autonomy (Farkas et al., 1990). Schools often use the threat of punishment, such as consequences for absences, to spur hard work and effort. Rewarding these things absent of punishment threats is a valuable tool (Farkas et al., 1990).

Teachers who support autonomy have better-motivated students who achieve more and feel better about themselves (Deci et al., 1991). Autonomy supportiveness takes the shape of a nurturer, and does not look like someone controlling or cold (Ryan & Deci, 2000b). This can be done by making sure students understand tasks, rules, and assignments, and can connect those with their own personal goals and values (Ryan & Deci, 2000b). Self-determination theorists define autonomy as the ability to utilize one’s free will (Ryan & Deci, 2000b). In students, autonomy looks like taking pleasure in one’s work and choosing to continue with it. The opposite, being controlled or regulated without the ability to choose, results in student feelings of anxiety and the inability to cope (Deci et al., 1991).

One reason today’s students lack control is the high stakes standardized testing environment that has caused more teachers to become controlling in their classrooms (Stevens et al., 2006). Indeed, the high stakes environment created by educational reform policies does the opposite of its intended goal to aid disadvantaged students (Becker &
Luthar, 2002). When teachers impose deadlines, threats or pressures related to academics, student motivation wanes, most likely because students’ needs for autonomy cannot be fulfilled in such settings (Ryan & Deci, 2000b). Older studies on the negative effects of schooling, as reviewed by Becker and Luthar (2002), showed a trend for teacher-directed instruction in low-income school districts. They noted the connection between this and dropout rates.

Using the principals of the Self-Determination Theory as a basis for their investigation, Carpentier and Mageau (2013) studied the effect of autonomy-supported change-oriented feedback on student motivation and athletic performance. Their premise was that change-oriented, or corrective, feedback, when given in a respectful and autonomy-supportive way would be more effective at motivating student athletes than promotion-oriented feedback, or praise. They defined successful change-oriented feedback as meeting eight criteria. Those autonomy-supportive characteristics are listed in Figure 5.

Figure 5

*Autonomy-Supportive Characteristics of Change-Oriented Feedback*
For the study, the authors recruited 58 coaches and 340 athletes (Carpentier & Mageau, 2013). Each coach had between one and 24 athletes participating in the study. Most of the athletes were women (60%) and the average age was 15, though athletes ranged from 11 to 35. The average time spent on the sport during the study was a little under 11 hours, and the average years of experience in the field was 6.85. The mean time athletes had spent with their coaches was two years.

To collect data, the researchers asked coaches to fill out a questionnaire that measured how autonomy-supportive they were. They also were asked to critique their athletes’ performance. Athletes were asked to fill out questionnaires after a practice with their coach. These questionnaires included the following measures: (a) quantity of change-oriented feedback, (b) perceived autonomy support, (c) self-determined motivation, (d) amotivation, (e) psychological needs satisfaction, (f) self-esteem, (g) life satisfaction, (h) vitality, and (i) positive and negative affect. This information was analyzed with hierarchical linear modeling.
Carpentier and Mageau (2013) discovered that the more autonomy-supportive a coach was, the more aligned their feedback was with change-oriented feedback, at a significance level of < .001. This also predicted athletic outcomes. Most notably, athletes receiving autonomy-supportive change-oriented feedback were more motivated (γ₁₀ = .92, p < .001), felt more connected to their coaches (γ₁₀ = .34, p < .006), had more competence (γ₁₀ = .54, p < .001), and felt more autonomous (γ₁₀ = .62, p < .001). When factoring coaches’ perceptions of the athletes’ performance, quantity of change-oriented feedback improved performance (γ₁₀ = .24, p < .05).

These findings were significant for many reasons. First, they demonstrated that students receiving autonomy-supportive change-oriented feedback felt more supported on the three needs within SDT, and in turn were more motivated. Second, this showed that there was a direct link from that kind of feedback to motivation to performance success. Additionally, since the authors found that coaches who used this kind of feedback gave less feedback (Carpentier & Mageau, 2013), which implies that change-oriented feedback is more effective than the alternative, and likewise, that autonomy-supportive adults are more effective than controlling ones.

**Competence.** Competence is the ability to believe that one has the tools or strategies needed to accomplish a task (Ryan & Deci, 2000). Students who report feeling competent have more cognitive buy-in with goal motivation (Pintrich, 1999). They also have more self-regulation and better academic achievement (Pintrich, 1999). Feelings of competence, or self-efficacy, have been linked to three important educational outcomes, (a) motivation, (b) achievement, and (c) development (Zimmerman & Cleary, 2006). To succeed academically, intelligence only accounts for so much (Zimmerman & Cleary,
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2006). When students with low ability are on grade level, it is because of high feelings of self-efficacy, since these feelings build strategies like self-reflection and strategic planning to create long-lasting success (Zimmerman & Cleary, 2006).

Feedback, challenges, and freedom promote competence (Ryan & Deci, 2000). For these reasons, competence can be achieved by keeping perceived adult control to a minimum, allowing students to make decisions, and providing information necessary for an assigned task (Deci et al., 1991). These things exist in classrooms, but they are not distributed evenly across socioeconomic and racial lines. Stevens et al. (2006) found that Hispanic students, despite reporting more interest and determination in mathematics than their White peers, were exposed to less praise and felt less success. This led to a decided lack of efficacy in Hispanic pupils (Stevens et al., 2006).

Pajares and Graham (1999) found that when studying middle school math students, competence, or self-efficacy, was the only motivation-related predictor of student performance at both the beginning of a school year and the end. Their sample consisted of 273 students, 54% of whom were boys, 69% who identified as White, from a public suburban school. Unfortunately, they did not have access to socioeconomic information to use for analysis of data.

Using a task-specific assessment of efficacy, Pajares and Graham (1999), saw that self-efficacy was the only predictor of academic outcomes, as measured by GPA and exam scores, that was evident in both fall ($\beta = .267 \ p < .0001$) and spring ($\beta = .272 \ p < .0001$). This held true for both male and female students. From this research, it is able to see why it is important for researchers and educators to focus attention on students’ beliefs about their academic competence.
In a more recent study, Legault, Green-Demers, and Pelletier (Legault, Green-Demers, & Pelletier, 2006), studied amotivation in high school students. This study had a sample size of 349 students who were among 10,000 students who participated in a large high school student motivation survey. These students were selected because that survey indicated they had higher levels of amotivation than other students in the survey. Students who selected sometimes, frequently, or all the time on the question, “How often do you find that you do not want to study or do school work?” were asked to participate in the new study.

What they found was that amotivation was correlated with ability beliefs, or student competence. The lack of motivation was negatively correlated with performance ($r = -.42, p < .001$), time spent studying ($r = -.18, p < .005$), and academic self-esteem ($r = -.46, p < .001$). It was positively correlated with intention to drop out ($r = .36, p < .001$), lack of academic interest ($r = .50, p < .001$), and academic anxiety ($r = .30, p < .001$). When viewed in connection with Pajares and Graham’s (1999) findings, it is even more apparent that creating an environment in which students have positive feelings of their abilities is essential to students’ school function and performance.

*Relatedness.* Ryan and Deci (2000) define relatedness as the ability to feel connected to a group, culture or system. To develop and utilize internally regulated extrinsic motivations in school settings, students need to feel connected to teachers and other scholastic support staff. When students feel ignored by their teachers, or feel that those teachers do not care about them, they lose their drive to achieve (Ryan & Deci, 2000). Like with autonomy, when schools and teachers use threats and systems that force
deadlines, goals, directives, and high-stakes evaluations, motivation is weakened and/or deterred.

When students do not feel connected and supported, they are less motivated (Flouri & Buchanan, 2002; Tanaka & Watanabea, 2012). This is problematic in schools serving students from backgrounds of poverty. Disadvantaged students report feeling teachers have lowered expectations for them more than their wealthier peers do (Becker & Luthar, 2002). In addition, these students often receive negative communication about their academic potential, especially in the case of Black boys (Becker & Luthar, 2002). Veteran teachers, especially, struggle after years of teaching students from low SES, and are not as connected to students and struggle with their own teaching efficacy (Yeo, Ang, Chong, Huan, & Quek, 2008).

Student success is dependent on caring adults who have high expectations of academic achievement (Jodry, Robles-Piña, & Nichter, 2004). High-achieving students often share one important commonality – they have at least one caring adult, from any realm, including school or community, who valued education and kept tabs on their progress and performance (Jodry et al., 2004). Unfortunately, the school settings in which students of poverty reside work against these types of relationships, mainly because of one thing: the high teacher turnover rate.

Teacher turnover in urban schools is much higher than in wealthier districts (Simon & Johnson, 2015; Carroll, 2007). In 2007, the national rate was 16.8 percent, while urban schools averaged a turnover rate of more than 20 percent (Carroll, 2007). Some schools are in exceptionally dire straits, with Philadelphia losing 70% of its teachers within six years, and in 12 Las Vegas schools, the average time teachers stayed
in district was under two years (Carroll, 2007). This turnover costs districts millions, possibly tens of millions, of dollars each year (Carroll, 2007). It also takes a large toll on student success.

Looking at data from New York City, where 18% of teachers leave the district each year, Ronfeldt, Loeb, and Wyckoff (2013) looked at the connection between teacher turnover and student achievement in math and reading. They used data from 625,000 observations from fourth and fifth grade elementary students throughout the city during the course of five years. In those schools, there was a 20% turnover rate in those grades.

The results showed that students in the lowest quartile of teacher turnover did not have as many Black, Hispanic, or students from low SES (Ronfeldt et al., 2013) as those in the highest quartile. Academically, students in the two quartiles with the most turnover performed lower on achievement tests, with $p$ values between .005 and .007, depending on the model used to analyze effect. While teacher quality and experience surely have an impact on this, the inability for students to connect with teachers because of limited time spent with them seems a reasonable assumption.

Adult connections are not the only meaningful relationships students in schools of poverty need. Support and relatedness also come in the form of peer support. There is significant positive correlation between peer groups who placed value on education and individual students’ academic success; students who have friends who do not value achievement do not achieve, whereas those whose friends value it do (Becker & Luthar, 2002; Reis, Colbert, & Hébert, 2005). Reis and colleagues (2005) created the analogy of a staircase to describe disadvantaged yet successful students. They said that students surrounded by academically-minded peers walked up the crowded stairs of success. If
they tried to turn around, their friends kept pushing them up the stairs. However, the students who had friends walking down the stairs with them could not stop themselves from continuing downwards.

When students walk up the staircase, they have a vision of what is at the top. The following two sections will now look at two theories closely related to students’ conceptions of self and goal motivation.

**Possible Selves**

Possible Selves Theory stems from self-concept theory and cognitivism and is closely connected to self-regulation. Introduced by Markus and Nurius (1986), this theory factors in the schemas individuals created based on their experiences. One’s perception of oneself leads one to behave in a certain way, ignore or respond to certain stimuli, and work toward or away from certain possibilities (Markus & Nurius, 1986). The base assumption of the theory is that people have multiple possible future selves. Possible selves are cognitive imaginings of future lives students may lead (Leondari et al., 1998). They motivate in that they either drive students to a goal or away from a fear (Leondari et al., 1998). Like SDT, possible selves are motivators of change. Table 4 shows the potential consequences that occur when the implications surrounding one’s view of their possible selves are neglected.

Table 4

*Negative Consequences of Neglected Needs – Possible Selves*

<table>
<thead>
<tr>
<th>Motivational Construct</th>
<th>Possible Negative Consequences When Factor is Neglected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Possible Selves</td>
<td>• Lower Academic Achievement</td>
</tr>
</tbody>
</table>
Facilitating change in academic self-regulated motivation. When students have more detailed and actualized visions of possible selves, they perform better academically (Lamb, 2011). When students are connected to visions of their possible future selves, they are more likely to persevere despite setbacks (Oyserman, Destin, & Novin, 2014). Positive images of future selves also leads to an increase in self-esteem (Owens & Patterson, 2013).

The more developed a possible self is, the more motivated a student is to achieve or avoid a possible future self (Stevenson & Clegg, 2011). When balance is found between hoped for and feared selves, there is a positive effect on school performance (Oyserman et al., 1995). Yet, when possible selves do not match with cultural identities, or ignore difficulties to be encountered, they are not helpful to motivation (Oyserman et al., 2006). Students from backgrounds of poverty do not have the social support or strategies necessary to create and sustain beneficial possible future selves (Oyserman et al., 2006). These students will also see difficulties in achieving positive future selves as signs of failure, and give up on their goals (Oyserman et al., 2006).

In 2002, Yowell specifically looked at how the possible selves theory and its constructs impacted Latino students. Spring boarding from Cook et al.’s (Cook et al., 1996) seminal study (which was referenced earlier in this chapter), Yowell (2002) set out to see if one subgroup of the achievement gap was affected by their perceptions of future
selves. The researcher performed a study with Latino youth to see if possible selves, or one’s imagined idea of oneself in the future, predicted future academic outcomes. This mixed methods study explored both students’ perceptions of possible selves and their school engagement. She looked at both hoped-for futures, things students wanted to happen, and feared futures, things students were afraid would happen. The study of 415 students in a large urban school system included student interviews, a possible selves inventory, demographic and socioeconomic data, dropout risk factor analysis, and grade point average.

What Yowell (2002) found was that students’ feared selves predicted dropout risk rate ($r = .47, p < .0001$). This showed additional strength in terms of gender, with boys more likely to be at risk of dropping out. Almost three-fourths of students identified themselves as a reason for their potential failure, and no student said the fault lay with their school. Additionally, qualitative analysis showed that students were unable to name specific strategies or ways in which people overcame obstacles and succeeded. Yowell hypothesized that this limited awareness of realistic or concrete strategies was ignorance of procedural knowledge. The researcher noted that both students with high expectations and lower expectations were not aware of the steps needed to achieve educational goals. Thus, to ensure better developed possible selves it is important to look at how goal orientations are developed in students from poverty.

**Fantasy Realization Theory**

The theory of fantasy realization looks at ways people operationalize fantasies in their lives. Fantasies are what are connected to the idea of possible selves. Fantasies are a person’s thoughts about a future self that might come true, whether or not they actually
expect it to happen (Oettingen, 1999). Oettingen (1999) listed three ways in which fantasy realization regulated behavior. Mental contrasting is the first. In this, one thinks about the possible obstacles that could be impediments to that future fantasy. By becoming aware of pitfalls and negative features of the fantasy, mental contrasting spurs one to change behaviors in order to overcome those obstacles. This fantasy path is useful and motivates an individual to act in ways more closely aligned with success.

The two other types of behavior that can result from fantasy realization are not positive. One might choose to ignore the reality of the fantasy and simply humor in it (Oettingen, 1999). An individual taking this path chooses to change nothing about their actions. The final way behavior can be shaped by fantasies involves only wallowing on the negatives, and refusing to acknowledge potential positive outcomes (Oettingen, 1999). Because the person who is on this path sees only the bad things associated with the fantasy, they also choose not to change their actions. If the theory of fantasy realization is to be applied to schools, the latter two fantasy reactions must be avoided. Table 5 shows the possible negative effects.

Table 5

*Negative Consequences of Neglected Needs – Fantasy Realization*

<table>
<thead>
<tr>
<th>Motivational Construct</th>
<th>Possible Negative Consequences When Factor is Neglected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fantasy Realization</td>
<td>• Lowered Future Expectations</td>
</tr>
<tr>
<td></td>
<td>• Limited Perseverance</td>
</tr>
<tr>
<td></td>
<td>• Failure to Take Action</td>
</tr>
<tr>
<td></td>
<td>• Perceive Difficulties as Failures</td>
</tr>
</tbody>
</table>
**Goal orientation.** Many schools, particularly those in low-income districts, support and teach the idea of positive thinking (Gollwitzer et al., 2011). This idea involves promoting student success by encouraging students to focus on lofty career and future goals. This could manifest as posters displaying celebrities, signs pointing out alumni success, or hoisting Ivy League college banners in the halls. The belief is that when students dream of these successes, they will be motivated to achieve (Gollwitzer et al., 2011). Unfortunately, this lacks the immediacy needed to inspire motivation (Wallis & Dell, 2004). Positive thinking does not require the goal commitment that is necessary for attaining and maintaining success (Gollwitzer et al., 2011). Gollwitzer and colleagues (2011) hypothesized this type of positive future design does not aid students in creating goals and developing the motivation necessary to achieve an imagined future.

This is realized in certain contexts, such as those surrounding Black students. These students find value in education, but do not demonstrate the actions that support that belief (Mickelson, 1990). Mickelson (1990) hypothesized this was due to a disconnect between ideal visions of future goals and students’ feelings of what they can realistically achieve based on what they see in their communities. When students are raised in poverty, their surroundings can override academic goals touted by schools (Oyserman et al., 1995). What they see around them and believe can happen is much different than the lofty successes found on the posters hanging on the school walls. And, when students have a history of not achieving, they tend to stay on those paths (Oettingen, Pak, & Schnetter, 2001).
Facilitating change in self-regulated academic motivation. Motivated by the work of others who had found that positive fantasies predicted poor academic outcomes, Kappes, Oettingen, and Mayer (2012) sought to specifically see if the same applied to students from disadvantaged settings and groups. They wanted to know if the premise that envisioning positive fantasies, which are people’s dreams, hopes, and best desires, led to a lack effort into making those dreams a reality even in students of poverty. They thought that in that situation it might be possible that the reverse is true. They wondered if the chronic stress faced by students living in poverty made it so that such positive fantasies were a respite from all the cognitive effort that students had to apply in their daily lives to function at the same level as their more advantaged peers.

To look into this, Kappes, Oettingen, and Mayer (2012) conducted three studies with post-secondary vocational students. The schools studied were in Germany and in New York City, the first specifically designed for unemployed men who had dropped out of high school, the second a non-profit school for women that had a majority population of minority students and first generation immigrants. As the authors reported, Germany has a large socioeconomic achievement gap, which would allow for an adequate sample to test their hypothesis on.

In all three studies, the authors tracked achievement by comparing change in GPA over time, though the baseline measures varied by school and time of year (H. B. Kappes et al., 2012). In order to refine the methodology after the results from the first study came in, the American school received additional measurements, like adding an additional measurement for negative fantasies. All studies asked students to imagine possible scenarios and complete them. The first two studies included scenarios about
their expectations for a test. The final study did not include this type of scenario because it was later in the school year.

The first study found that positive fantasies did indeed predict lowered rates of success ($r = -0.17, p = .03$). No significant relationship was found between level of expectations for future success and earned GPA. Because the first study only focused on German men, the researchers moved to the next two studies to see if this finding held true across genders and cultures. Study two also found that positive fantasies predicted lower GPA ($r = -0.27, p = .02$). This study also found a chain of impact – students who had more positive fantasies had lower attendance and therefore weaker GPAs. Like in studies before them, Kappes and colleagues (2012) saw that positive fantasies did not align with an increase in effort to accomplish goals. One additional finding from this study and the first was that students did have high expectations for their own future successes, even though those expectations were not predictive of their actual achievement.

The second study, which also measured self-discipline, found that this variable did not predict higher achievement, despite the hypothesis that it would. The researchers surmised that for this demographic of student, obstacles might arise that are far too challenging for self-discipline to overcome (H. B. Kappes et al., 2012). To see if this theory held out, the third study added another dimension, which was measuring self-discipline again later in the year. They found the same results; self-discipline was not a predictor of GPA.

The third study also found that the fantasy trap from the first two studies was overcome by students with higher levels of attendance and more effort (H. B. Kappes et al., 2012). They saw that students who had higher expectations of achievement ended up
having higher levels of achievement, which the researchers believe is due to having higher levels of attendance, with their analysis giving a 95% confidence interval. All studies supported the authors’ hypothesis that positive fantasies results in lowered levels of effort, which in turn result in weaker achievement.

While the authors acknowledge their measures of positive fantasies were limited by having a small number of measures (from two to eight, depending on the study), they believed them to still be valid measures (H. B. Kappes et al., 2012). Additionally, the researchers noted that self-report might not be the best measure of self-discipline, so they suggest future research use less subjective measures. Those limits aside, it appeared that positive fantasies hide the need for effort to achieve future goals (H. B. Kappes et al., 2012). This is why the researchers suggest that educational research focus next on determining how teachers and supportive mentors can help students create strategies for achieving students’ fantasized goals.

**Problem of Practice**

The Dairy School is a private residential school in the Northeast serving students of poverty. At Dairy, students leave their home situations and to live in a residential middle class environment with support from teachers, houseparents, counselors, coaches and others. During that time, students show more academic growth than not only their socioeconomic peers, but students from all demographics\(^1\). The Dairy School is on the front lines of the war against the achievement gap. Their ability to reach and serve students from low SES within a confined context makes them an ideal place to assess needs and test interventions aimed at eliminating the achievement gap and improving the long-term post-secondary success of students of poverty, who need intensive support
systems in place to be successful (Gurt, 2015). Supporting the development of self-regulated motivation in order to create goals and envision future success might be one potentially successful system.

**Conclusion**

Motivation is one factor that could be influenced to combat the achievement gap. The literature demonstrates students of poverty often do not have the same institutional and motivational advantages as students from other SES in regards to perceptions of future selves and strategies to overcome future obstacles, yet the problems in relation to the achievement gap are broad in regard to motivation and possible selves. In order to determine the state of academic motivation, perceptions of future selves, and knowledge of obstacle strategies within the context of Dairy School, a needs assessment was conducted so that a potential future intervention could be crafted.
RELATE TO MOTIVATE

CHAPTER 3 – NEEDS ASSESSMENT

The previous chapter described the factors associated with socioeconomic status that are strongly connected to the achievement gap. While not one specific item is the root cause of the gap, one major underlying factor that will be the focus of this study is motivation. The research reviewed in the previous chapter indicates that partly due to poorly activated perceptions of future selves and weak goal orientation, or limited knowledge of obstacle strategies (Gollwitzer et al., 2011; Kappes, Singmann, & Oettingen, 2012; Oyserman et al., 1995; Yowell, 2002), motivation can be hindered in students from low socioeconomic statuses.

Purpose of Study

Thus, the purpose of this needs assessment was to determine the extent to which the problems identified in Chapter 2 regarding student motivation, perceptions of possible selves and obstacle strategies reflect the broader literature within the context of Dairy School.

Research Questions

In order to determine the extent to which the problems concerning student motivation, perceptions of possible selves, and obstacle strategies exist among students in Dairy School, the following research questions guided this needs assessment:

Table 6

Needs Assessment Research Questions

<table>
<thead>
<tr>
<th>RQ1</th>
<th>How is motivation demonstrated by Dairy School students?</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ2</td>
<td>To what degree do Dairy students feel competent, autonomous, and connectedness?</td>
</tr>
</tbody>
</table>
RQ3 | What types of strategies do Dairy students utilize when goal setting?
---|---
RQ4 | To what degree do students perceptions of future selves predict or relate to actual outcomes?

**Research Design**

To answer the research questions, this needs assessment took place in two parts. One quantitative study was designed to determine levels of academic and social motivators found in students at the school. It also sought to identify the motivational supports and climate present at the school. The second mixed methods study looked at the SDT construct of feelings of student competence as they relate to envisioning possible future selves.

**Context of Study**

In this section, the description of the study context will be described in detail. The target audience, academic setting, and mission of Dairy School will be described in order to provide a better picture of the factors contributing to the needs assessment.

**Description of Context**

Dairy School takes a special approach to its mission serving students from backgrounds of poverty. It is a residential, extended-year program that enrolls students from across the country and houses them in homes with married, middle class parents and equips them with middle class tools like clothing, computers, vacations, and more. It offers many incentives to encourage student performance and academic success. Examples of these incentives include special breakfasts, gift certificates and scholarship money.
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Approximately 900 students attend Dairy School’s high school. This division employs over 90 teachers and has five scholastic administrators. In addition to this, a large number of adults are employed in the “home” division of the school, from live-in residence advisors to administrators. Counselors and social workers float between both the scholastic and home divisions, and there is a large group of managerial staff who oversee both departments.

In the 2013-2014 school year, of Dairy School students, 51% were female, and 44% identify as White. Each student receives a career certification before graduation and ¾ of students go on to post-secondary education.

Target Audience

Many stakeholders are invested in the importance of post-secondary success for Dairy School students. Board members and administrators have a vested interest in student success for many reasons, one of which is the amount of money spent on each student, both during school and after graduation. The driving mission of Dairy School is to ensure post-secondary success. Parents and sponsors desire student success because they often hope for better careers and incomes for their children than they have. Faculty and staff also want to see the students break out of the cycle of poverty. Additionally, many students come to Dairy hopeful that they will leave to get a college degree, find a good job, and not experience hunger or poverty when they become adults. Because Dairy’s vision is to create successful students, it is in the best interest of all involved with the school to determine how to create students filled with motivation and the drive to succeed.

Study One Methods
RELATE TO MOTIVATE

The first study sought to assess how student motivation was perceived and felt at Dairy School. This was done by assessing the constructs of intrinsic motivation and extrinsic motivation, as well as SDT-operationalized measures of competence, autonomy, and relatedness.

Participants

Surveys were emailed to 43 adults at Dairy. Of the surveys mailed, 34 surveys were returned for a 79% response rate. One additional survey was incomplete. Respondents consisted of three administrators, 23 teachers, four houseparents, one coach, two counselors/social workers, two club advisors, and two who identified as other. The largest population of respondents was teachers. All 23 teacher respondents reported their race as White. Most respondents (85%) had experience with students in the standard curriculum. Over half (55%) worked with students in remedial or intensive courses. 58% had experience with AP or honors level students. Of all respondents, 83% had worked at Dairy for 10 or more years.

English department teachers were emailed a link to the student survey to pass on to students if they had time. Of the 93 students who began the survey, 84 completed it. Just over 43% of students identified as White and 30% Black, which aligns with the ratio found in the school. The remainder identified as Hispanic or Latino (11%), Multiracial (16%), Asian/Pacific Islander (1%) or chose other or not to disclose. The large majority of respondents were 11th graders (57 students) and the average length of attendance at Dairy was 3.8 years.

Tools
The needs assessment was conducted through the use of two online surveys hosted by SurveyGizmo. Each Likert-style survey was created by the researcher to explore the constructs of the Self-Determination Theory within the context of Dairy School. The student survey asked questions about students’ individual motivations. It comprised of five demographic questions and 41 motivation questions. The adult survey asked about perceptions of student motivation at the school. It also included some generalized questions on teacher perceptions of motivation as a construct. Seven of the 42 questions were demographical items. Questions were reviewed by colleagues and a supervising professor, as well as an administrator at Dairy School. Table 7 shows examples of questions from the survey. The full survey can be seen in Appendices A (adult) and B (student).

Table 7

First Needs Assessment Sample Questions

<table>
<thead>
<tr>
<th>Construct</th>
<th>Number of Items</th>
<th>Adult Survey Question</th>
<th>Number of Items</th>
<th>Student Survey Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internally-Regulated</td>
<td>8</td>
<td>• How academically motivated are</td>
<td>18</td>
<td>• How important are grades to you?</td>
</tr>
<tr>
<td>Motivation</td>
<td></td>
<td>• If I fail a course, I will disappoint myself.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Externally-Regulated</td>
<td>6</td>
<td>• Scholarship money motivates students to do well in school.</td>
<td>3</td>
<td>• Scholarship money makes me want to do well in school.</td>
</tr>
<tr>
<td>Autonomy</td>
<td>4</td>
<td>• Students at this school are allowed to decide how to study.</td>
<td>5</td>
<td>• I have the ability to decide how to study.</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Students would be more successful if allowed to make more academic decisions.</td>
<td></td>
<td>• I must complete school work the way my teacher tells me.</td>
</tr>
<tr>
<td>Competence</td>
<td>7</td>
<td>• How confident are students about their abilities to succeed at academics?</td>
<td>5</td>
<td>• I believe I can get good grades in all my classes.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Students feel competent about their academic abilities.</td>
<td></td>
<td>• If I get a poor grade it’s because I’m not smart enough.</td>
</tr>
</tbody>
</table>
**Relatedness**

<table>
<thead>
<tr>
<th></th>
<th>Relatedness</th>
<th>2</th>
<th>10</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>How supported do students feel by adults?</td>
<td></td>
<td>I believe my teachers want me to get good grades.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>How academically supported do students feel by their friends?</td>
<td></td>
<td>I believe my friends want me to get good grades.</td>
<td></td>
</tr>
</tbody>
</table>

**General**

<table>
<thead>
<tr>
<th></th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>How academically motivated are students?</td>
</tr>
<tr>
<td></td>
<td>Motivation is one of the key components of academic success.</td>
</tr>
</tbody>
</table>

*Note: Questions were matched with five-point Likert-scaled responses.*

Adult stakeholders at Dairy were surveyed first, around the school’s spring break, in April of 2014. Student surveys were emailed and completed during June of that same school year. The survey was sent via the school’s internal email system.

**Procedure**

The following section describes the manner in which surveys were distributed and collected. It also discusses statistical tests performed on survey results.

**Data collection.** Surveygizmo.com collected, housed and compiled all data for both surveys. The data was password protected via this secure online server. To select adult participants, the researcher sent an email to teachers, support staff and
RELATE TO MOTIVATE

administrators asking for volunteers to participate in a survey. A colleague identified houseparents who would be willing to complete surveys, and a separate email asking for volunteers was sent to that group. Those who responded affirmatively were emailed surveys. One reminder email was sent after the majority of responses were received.

To distribute student surveys, the researcher emailed the English department asking them to email a link to the survey on to their students. This method was selected because all students at Dairy have English classes. Additionally, the researcher asked other staff members to email the link to students if they were able. No follow-up email was sent to teachers.

Data analysis and statistical tests. The needs assessment used quantitative data gathered from Likert-type scaled surveys. The results were then analyzed using descriptive and inferential statistical procedures. Table 8 shows how each research question was analyzed.

Table 8
First Needs Assessment Data Analysis Plan

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Statistical Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>RQ1 How is motivation demonstrated by Dairy School students?</td>
<td>• Descriptive Statistics – Mean, Median, and Mode</td>
</tr>
<tr>
<td>RQ2 To what degree do Dairy students feel competent, autonomous, and connectedness?</td>
<td>• Descriptive Statistics – Mean, Median, and Mode</td>
</tr>
</tbody>
</table>
## RELATE TO MOTIVATE

- Inferential Statistics – Spearman’s Rho to assess correlation within Likert-type scaled-responses

<table>
<thead>
<tr>
<th>RQ3</th>
<th>What types of strategies do Dairy students utilize when goal setting?</th>
<th>Analyzed in Needs Assessment Study Two</th>
</tr>
</thead>
</table>

| RQ4 | To what degree do students perceptions of future selves predict or relate to actual outcomes? | Analyzed in Needs Assessment Study Two |

### Limitations

Since juniors and seniors have laptops, while underclassmen share computers in their residence, this might explain the low number of underclassmen responses. Additionally, seniors were participating in commencement preparation activities and might have been otherwise occupied. Because this survey was sent to students during final exams, the response could also have been dependent on students’ free time.

### Findings

The first needs assessment revealed many facets of student motivation that helped form the creation of the intervention in this dissertation. The following sections will detail key findings as related to each research question. See Tables 9, 10, and 11 at the end of this section for correlations and significance.
Research question 1. How is motivation demonstrated by Dairy School Students?

Student/teacher perception differences. The needs assessment revealed some misperceptions about what motivates students on the part of teachers. Teachers believe that students are motivated to play video games (70.6% agree or strongly disagree). However, 50% of students said video games were very unimportant, and only 13.1% ranked it as very or somewhat important.

In regards to more academic matters, only 29.4% of adults thought students were motivated to achieve by the threat of summer school. Eighty-seven percent of students said it motivated them to do well in their classes.

Research question 2. To what degree do Dairy students feel competent, autonomous, and connectedness?

Perception of student motivation. Sixty-one percent of adult respondents thought students were somewhat motivated (no respondents selected very motivated). This is an interesting contrast with student findings, as 64.9% of students said that their grades were very important to them, and 75.7% said they would be disappointed in themselves if they failed a course. Additionally, 52.7% said that school is very important to them.

Autonomy. In this instrumentation, autonomy was operationalized as a students’ ability to make choices related to school, such as how to study or what classes to take. Autonomy seems to be the least supported need. Only 17.6% of respondents reported students have autonomy in assignment completion. Other questions dealing with this need had similar results.
RELATE TO MOTIVATE

**Competence.** This measure looked to see both how confident teachers perceived students to be in their scholastic abilities, and teachers’ perceptions of their students’ abilities. Two similar survey items were posed in regards to student competence. The first question asked *How confident are students about their abilities to succeed at academics?* The second survey item stated *Students feel competent about their academic ability.* Over 64% said students are confident in their abilities, yet only 38% said students feel competent.

**Perceptions of academic ability.** Almost 80% of adults stated students have the ability to be academically successful by getting good grades. However when it came to the question of future academic ability, 94% felt that some students are not “cut out for college.”

**Support systems.** Rankings were utilized to determine students’ perceptions of adult support. For items asking which adults want students to get good grades based upon frequency of *strongly agree* and *agree* responses. Family (88.1%) and coaches and advisers (82.1%) were the highest ranked support groups. Following this came houseparents (79.8%), teachers (73.8%) and friends (59.6%).

Students were asked who they felt would be disappointed if they failed. The order stayed the same. Family (71.5%) and coaches and advisers (69.1%) were most likely to be identified as disappointed, followed by houseparents (59.6%), teachers (55.9%), and friends (25%). Of particular note, for this question stem, students were also asked to state if they would be disappointed in a failing grade, and 89.3% of students said they would, with 73.8% marking strongly agree, which was almost twice as many students who felt their family would be disappointed (40.5%).
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There were many statistically significant correlations found between student responses, as shown in Tables 9, 10, and 11. *I believe my teachers want me to get good grades* was strongly connected to other achievement indicators such as grade average ($r = 0.368, p < 0.01$) and scholarship money motivation ($r=0.406, p < 0.01$). The correlation between teacher support and student feelings of the importance of school ($r=0.534, p < 0.01$) and competence ($r=0.492, p < 0.01$) were also significant.

In terms of what motivates students to achieve academically, one connection stood out. Students who stated school was important to them, not only felt academically competent ($r=0.661, p < 0.01$) and good about themselves ($r=0.577, p < 0.01$), they also believed that school would help them achieve their future career goals ($r=0.329, p < 0.01$).

Table 9

*First Needs Assessment Correlations 1*

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I identify as</td>
<td>1.000</td>
<td>.376**</td>
<td>.397**</td>
<td>-.065</td>
<td>.136</td>
<td>.164</td>
<td>.175</td>
<td>.109</td>
</tr>
<tr>
<td>2. My current grade average is</td>
<td>.376**</td>
<td>1.000</td>
<td>.668**</td>
<td>.011</td>
<td>.322**</td>
<td>.368**</td>
<td>.077</td>
<td>.229*</td>
</tr>
<tr>
<td>3. I take the following types of classes</td>
<td>.397**</td>
<td>.668**</td>
<td>1.000</td>
<td>-.162</td>
<td>.197</td>
<td>.148</td>
<td>-.028</td>
<td>.050</td>
</tr>
<tr>
<td>4. I have attended this school for _ years.</td>
<td>-.065</td>
<td>.011</td>
<td>-.162</td>
<td>1.000</td>
<td>.040</td>
<td>.092</td>
<td>-.158</td>
<td>-.009</td>
</tr>
<tr>
<td>5. Scholarship money makes me</td>
<td>.136</td>
<td>.322**</td>
<td>.197</td>
<td>.040</td>
<td>1.000</td>
<td>.406**</td>
<td>.210</td>
<td>.268*</td>
</tr>
</tbody>
</table>
want to do well.  
6. I believe my teachers want me to get good grades.  
7. If I fail a course, I will disappoint my houseparents.  
8. If I fail a course, I will disappoint myself.  
9. Privileges in the student home make me want to do well in school.  
10. The thought of summer school makes me want to pass my classes.  
11. I get better grades in classes I like.  
12. I don’t care about getting good grades in classes I don’t like.  
13. If I get a poor grade, it’s because I’m not smart enough.  
14. I’m allowed to
choose my school subjects.
15. I have the ability to decide how to study.
16. I can choose which assignments to do.
17. I am good at school work.
18. When I get good grades, I feel good about myself.
19. The grades I get now will determine what career I have.
20. School is important to me.

<table>
<thead>
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<th>13</th>
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<th>16</th>
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</thead>
<tbody>
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<td>1. I identify as</td>
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<td>-0.047</td>
<td>0.052</td>
<td>0.088</td>
<td>0.213</td>
<td>0.159</td>
<td>-0.001</td>
<td>-0.124</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2. My current grade average is</td>
<td>0.058</td>
<td>0.145</td>
<td>-0.036</td>
<td>-0.191</td>
<td>0.285**</td>
<td>0.103</td>
<td>-0.167</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. I take the following types of</td>
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<td>-0.027</td>
<td>0.099</td>
<td>0.011</td>
<td>-0.022</td>
<td>0.218</td>
<td>0.034</td>
<td>-0.203</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>classes</td>
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<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 10

First Needs Assessment Correlations 2
### RELATE TO MOTIVATE

<p>| | | | | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4.</td>
<td>I have attended this school for _ years.</td>
<td>.001</td>
<td>-.057</td>
<td>-.023</td>
<td>-.034</td>
<td>-.104</td>
<td>-.108</td>
<td>-</td>
<td>.315**</td>
<td>.115</td>
</tr>
<tr>
<td>5.</td>
<td>Scholarship money makes me want to do well.</td>
<td>.169</td>
<td>.337**</td>
<td>.153</td>
<td>-.0278*</td>
<td>-.226*</td>
<td>.334**</td>
<td>.147</td>
<td>.063</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>I believe my teachers want me to get good grades.</td>
<td>.280**</td>
<td>.176</td>
<td>.008</td>
<td>-</td>
<td>-.255*</td>
<td>.422**</td>
<td>.320**</td>
<td>-.101</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>If I fail a course, I will disappoint my houseparents.</td>
<td>.223*</td>
<td>.200</td>
<td>.154</td>
<td>-.121</td>
<td>-.088</td>
<td>.136</td>
<td>.268*</td>
<td>.077</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>If I fail a course, I will disappoint myself.</td>
<td>.168</td>
<td>.297**</td>
<td>.111</td>
<td>-.258*</td>
<td>-.212</td>
<td>.273*</td>
<td>.224*</td>
<td>-.039</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Privileges in the student home make me want to do well in school.</td>
<td>1.000</td>
<td>.593**</td>
<td>.197</td>
<td>-.143</td>
<td>-.002</td>
<td>.274*</td>
<td>.303**</td>
<td>.095</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>The thought of summer school makes me want to pass my classes.</td>
<td>.593**</td>
<td>1.000</td>
<td>.239*</td>
<td>-.071</td>
<td>-.008</td>
<td>.238*</td>
<td>.127</td>
<td>-.039</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>I get better grades in classes I like.</td>
<td>.197</td>
<td>.239*</td>
<td>1.000</td>
<td>.168</td>
<td>.042</td>
<td>.132</td>
<td>.143</td>
<td>.002</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>I don’t care about getting good grades in</td>
<td>-.143</td>
<td>-.071</td>
<td>.168</td>
<td>1.000</td>
<td>.412**</td>
<td>-.131</td>
<td>-.229*</td>
<td>.094</td>
<td></td>
</tr>
</tbody>
</table>
classes I don’t like.
13. If I get a poor grade, it’s because I’m not smart enough.
14. I’m allowed to choose my school subjects.
15. I have the ability to decide how to study.
16. I can choose which assignments to do.
17. I am good at school work.
18. When I get good grades, I feel good about myself.
19. The grades I get now will determine what career I have.
20. School is important to me.

<table>
<thead>
<tr>
<th></th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>-.002</td>
<td>-.008</td>
<td>.042</td>
<td>.412**</td>
<td>1.000</td>
<td>-.051</td>
<td>-.110</td>
<td>-.048</td>
</tr>
<tr>
<td>14</td>
<td>.274*</td>
<td>.238*</td>
<td>.132</td>
<td>-.131</td>
<td>-.051</td>
<td>1.000</td>
<td>.364**</td>
<td>.050</td>
</tr>
<tr>
<td>15</td>
<td>.303**</td>
<td>.127</td>
<td>.143</td>
<td>-.229*</td>
<td>-.110</td>
<td>.364**</td>
<td>1.000</td>
<td>-.100</td>
</tr>
<tr>
<td>16</td>
<td>.095</td>
<td>-.039</td>
<td>.002</td>
<td>.094</td>
<td>-.048</td>
<td>.050</td>
<td>-.100</td>
<td>1.000</td>
</tr>
<tr>
<td>17</td>
<td>.338**</td>
<td>.261*</td>
<td>.158</td>
<td>-.264*</td>
<td>-.424**</td>
<td>.306**</td>
<td>.366**</td>
<td>.171</td>
</tr>
<tr>
<td>18</td>
<td>.189</td>
<td>.242*</td>
<td>.215*</td>
<td>-.199</td>
<td>-.050</td>
<td>.226*</td>
<td>.344**</td>
<td>.005</td>
</tr>
<tr>
<td>19</td>
<td>.029</td>
<td>.023</td>
<td>-.048</td>
<td>.037</td>
<td>.044</td>
<td>.178</td>
<td>.027</td>
<td>.010</td>
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<td>20</td>
<td>.284**</td>
<td>.389**</td>
<td>.133</td>
<td>-.396**</td>
<td>-.295**</td>
<td>.310**</td>
<td>.375**</td>
<td>-.015</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Table 11

*First Needs Assessment Correlations 3*

<table>
<thead>
<tr>
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<th>17</th>
<th>18</th>
<th>19</th>
<th>20</th>
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<td></td>
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</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>1. I identify as</td>
<td>-.010</td>
<td>-.060</td>
<td>-.138</td>
<td>-.116</td>
</tr>
<tr>
<td>2. My current grade average is</td>
<td>.361**</td>
<td>.127</td>
<td>.196</td>
<td>.322**</td>
</tr>
<tr>
<td>3. I take the following types of classes</td>
<td>.225</td>
<td>-.005</td>
<td>.147</td>
<td>.176</td>
</tr>
<tr>
<td>4. I have attended this school for _ years.</td>
<td>.032</td>
<td>.051</td>
<td>.152</td>
<td>.048</td>
</tr>
<tr>
<td>5. Scholarship money makes me want to do well.</td>
<td>.361**</td>
<td>.386**</td>
<td>.193</td>
<td>.460**</td>
</tr>
<tr>
<td>6. I believe my teachers want me to get good grades.</td>
<td>.192**</td>
<td>.263*</td>
<td>.027</td>
<td>.534**</td>
</tr>
<tr>
<td>7. If I fail a course, I will disappoint my houseparents.</td>
<td>.295**</td>
<td>.264*</td>
<td>-.034</td>
<td>.214</td>
</tr>
<tr>
<td>8. If I fail a course, I will disappoint myself.</td>
<td>.409**</td>
<td>.415**</td>
<td>.097</td>
<td>.543**</td>
</tr>
<tr>
<td>9. Privileges in the student home make me want to do well in school.</td>
<td>.338**</td>
<td>.189</td>
<td>.029</td>
<td>.284**</td>
</tr>
<tr>
<td>10. The thought of summer school makes me want to pass my classes.</td>
<td>.261*</td>
<td>.242*</td>
<td>.023</td>
<td>.389**</td>
</tr>
<tr>
<td>11. I get better grades in classes I like.</td>
<td>.158</td>
<td>.215*</td>
<td>-.048</td>
<td>.133</td>
</tr>
<tr>
<td>12. I don’t care about getting good grades in classes I don’t like.</td>
<td>.264*</td>
<td>-.199</td>
<td>.037</td>
<td>-.396**</td>
</tr>
<tr>
<td>13. If I get a poor grade, it’s because I’m not smart enough.</td>
<td>.424**</td>
<td>-.050</td>
<td>.044</td>
<td>-.295**</td>
</tr>
<tr>
<td>14. I’m allowed to choose my school subjects.</td>
<td>.306**</td>
<td>.226*</td>
<td>.178</td>
<td>.310**</td>
</tr>
</tbody>
</table>
RELATE TO MOTIVATE

15. I have the ability to decide how to study.  
   .366**  .344**  .027  .375**

16. I can choose which assignments to do.  
   .171  .005  .010  -.015

17. I am good at school work.  
   1.000  .302**  .175  .661**

18. When I get good grades, I feel good about myself.  
   .302**  1.000  .379**  .577**

19. The grades I get now will determine what career I have.  
   .175  .379**  1.000  .329**

20. School is important to me.  
   .661**  .577**  .329**  1.000

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Study Two Methods

The second needs assessment study explored students’ perceptions of possible future selves and their ability to identify obstacle strategies.

Participants

At the beginning of the 2014-2015 academic school year, 60 students in the researcher’s four 11th Grade English/Language Arts classes were given a survey. Two of these classes were double-period intensive remedial courses. The survey was repeated (with slight language variations) at the end of the year. 53 total students completed both pre- and post-surveys, with seven being removed due to enrollment termination or transfers to other classes. Of these 53, 21 were in single period classes and 32 were in the double period intensive sections. The gender ratio of the participants included 27 males and 26 females. No additional demographic information was collected.
RELATE TO MOTIVATE

Tools

The researcher created a short self-efficacy survey based on Midgley, Maehr, and Urdan’s (1996) Patterns of Adaptive Learning Survey (see Appendices C and D), along with open-ended questions students could choose to answer. The self-efficacy survey was used as a tool to measure students’ levels of competence in line with that construct of the Self-Determination Theory and also because the PALS incorporates goal orientation. At the beginning of the year, these questions asked students to imagine their best possible future academic self. The end of the year questions asked students to reflect on their grades.

Procedure

In August 2014, the researcher conferenced with each student individually. The researcher explained the survey to students and informed them they would complete a similar survey at the end of the year. The researcher told students they could fill out as much or as little as they wanted to, and received each students’ verbal assent. In June 2015, the researcher distributed the post-surveys to students and reviewed the instructions. Students completed the surveys on their own. There was no consequence within the classroom for not completing this survey, and students were informed verbally that they could opt out of it.

Data collection. Students completed pen and paper surveys. The researcher then transcribed these into an Excel spreadsheet. Data was stored on a secure, password protected iPad, with backup data stored on a password protected laptop.

Data analyses and statistical tests. Spearman’s rho was used to determine correlation significance in relation to the research questions. For open-ended questions,
the researcher coded responses by categorizing strategy descriptions as general or specific, feelings as negative, neutral or positive, and networks as large or small. The breakdown of these tests are in Table 12.

Table 12

Second Needs Assessment Data Analysis

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Statistical Analysis</th>
<th>Data Source</th>
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<tbody>
<tr>
<td>How is motivation demonstrated by Dairy School students?</td>
<td>Analyzed in Needs Assessment Study Two</td>
<td></td>
</tr>
<tr>
<td>To what degree do Dairy students feel competent, autonomous, and connectedness?</td>
<td>- Descriptive Statistics – Mean, Median, and Mode</td>
<td>PALS Survey</td>
</tr>
<tr>
<td></td>
<td>- Inferential Statistics – Spearman’s Rho to assess correlation within Likert-type scaled-responses</td>
<td></td>
</tr>
<tr>
<td>What types of strategies do Dairy students utilize when goal setting?</td>
<td>- Inferential Statistic (Quantitative) – ANOVA with post hoc Sheffe analysis</td>
<td>PALS Survey</td>
</tr>
<tr>
<td></td>
<td>- Inferential Statistics (Quantitative) – Spearman’s Rho to assess correlation</td>
<td>Open-ended responses</td>
</tr>
</tbody>
</table>
RELATE TO MOTIVATE

within Likert-type scaled responses.

- Inferential Statistics
  (Qualitative) – Spearman’s Rho to assess correlation within Likert-type scaled-responses

- Inferential Statistics
  (Quantitative) – ANOVA with post hoc Sheffe analysis

- Inferential Statistics
  (Quantitative) – Spearman’s Rho to assess correlation within Likert-type scaled-responses

- Descriptive Statistics – Mean, Median, Mode

- PALS Survey

- Open-ended responses

To what degree do students perceptions of future selves predict or relate to actual outcomes?

RQ4

- Inferential Statistics
  (Qualitative) – Spearman’s Rho to assess correlation within Likert-type scaled-responses.
RELATE TO MOTIVATE

Findings

The following sections highlight key findings for Study Two.

**Research question 3.** What types of strategies do Dairy students utilize when goal setting? For this question, the researcher looked to analyze the relationships between support networks, study skills and strategies, specific strategy identification, feelings of competence, and final grade. Table 13 shows the codes used for each category.

Table 13

*Second Needs Assessment Data Codes*

<table>
<thead>
<tr>
<th>Category</th>
<th>Codes</th>
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<td>Support Networks</td>
<td>• Big</td>
</tr>
<tr>
<td></td>
<td>• Small</td>
</tr>
<tr>
<td>Study Skills</td>
<td>• General</td>
</tr>
<tr>
<td></td>
<td>• Specific</td>
</tr>
<tr>
<td>Strategy Identification</td>
<td>• General</td>
</tr>
<tr>
<td></td>
<td>• Specific</td>
</tr>
<tr>
<td>Feelings of Competence</td>
<td>• Positive</td>
</tr>
<tr>
<td></td>
<td>• Negative</td>
</tr>
</tbody>
</table>

Tables 14 through 16 show the descriptive statistics of student responses as coded by the author.

Table 14

*Support Networks*
<table>
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<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
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</thead>
<tbody>
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<td>3.8</td>
<td>3.8</td>
<td>3.8</td>
</tr>
<tr>
<td>Small Network</td>
<td>16</td>
<td>30.2</td>
<td>30.2</td>
<td>34.0</td>
</tr>
<tr>
<td>Big Network</td>
<td>35</td>
<td>66.0</td>
<td>66.0</td>
<td>100.0</td>
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<tr>
<td>Total</td>
<td>53</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 15

*Pre-Test What Strategies Do Students Plan to Employ*

<table>
<thead>
<tr>
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<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
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<td>5.7</td>
<td>5.7</td>
<td>5.7</td>
</tr>
<tr>
<td>General</td>
<td>42</td>
<td>79.2</td>
<td>79.2</td>
<td>84.9</td>
</tr>
<tr>
<td>Specific</td>
<td>8</td>
<td>15.1</td>
<td>15.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>53</td>
<td>100.00</td>
<td>100.0</td>
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</table>

Table 16

*Post-Test What Strategies Did Students Use*

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
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<td>9.4</td>
<td>9.4</td>
<td>9.4</td>
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<tr>
<td>General</td>
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<td>71.7</td>
<td>71.7</td>
<td>81.1</td>
</tr>
<tr>
<td>Specific</td>
<td>10</td>
<td>18.9</td>
<td>18.9</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Strategies. Two questions assessed students’ use of strategies throughout the year. Students who identified specific strategies at the end of the year were more likely to have higher grades. Likewise, students who did not use specific strategies had lower grades. These findings are in line with the previous chapter’s identification of the problem of practice. See Tables 17 and 18.

Table 17

<table>
<thead>
<tr>
<th>Final Grade</th>
<th>Correlation</th>
<th>“What have you done?”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final Grade</td>
<td>Correlation</td>
<td>1.000</td>
</tr>
<tr>
<td>Coefficient</td>
<td>Significance</td>
<td>.</td>
</tr>
<tr>
<td>n</td>
<td>53</td>
<td>53</td>
</tr>
</tbody>
</table>

| Specific Strategies | Correlation | 1.000 |
| Correlation | Coefficient | .345* |
| Significance | .011 | . |
| n | 53 | 53 |

* Correlation is significant at the 0.05 level (2-tailed)

Table 18

<table>
<thead>
<tr>
<th>Final Grade</th>
<th>Specific Strategies</th>
</tr>
</thead>
</table>

66
**Research question 3.** To what degree do students’ perceptions of future selves predict or relate to actual outcomes?

**Grade.** At the end of the year, student grades ranged from 58% to 89%, with a mean of 73.9% and a standard deviation of 7.2. Students’ hoped-for grades ranged from 75% to 99%, with the average hoped-for grade being 87.

**Feelings of efficacy.** Positive self-efficacy statements were positively correlated with students’ hoped-for grades \((r = .385, p < .01)\), while negative self-efficacy statements were negatively correlated with students’ hoped-for grades \((r = -.312, p < .05)\). When looking at positive efficacy feelings at the end of the year, these had a significant effect on final grade. This aligns with the results of the literature review in Chapter 2.

**Limitations**
The small convenience sample size did not allow for much statistical significance to be found.

**Discussion**

The first study of this needs assessment highlighted certain disparities between Dairy School teachers’ and students’ attitudes and beliefs about academic success and motivation. It stands to reason that an intervention aligning both students and teachers can be used to help students – and teachers -- feel more competent about students’ future. The findings from the second study suggest that students lack workable perceptions of future selves and successful obstacle strategies to maintain academic motivation and achievement as indicated by general responses such as “study more.” Over 70 percent of students could only identify general strategies used at the end of the year. These results are in line with the research found in Chapter 2 that asserts that students need to be taught specific strategies to use to overcome obstacles (Yowell, 2002).

Of the five social connections students are exposed to at Dairy School, teachers ranked second lowest in terms of perceived academic support. Despite this ranking, teacher support has the highest correlation with academic success indicators. In order to elevate student motivation, it appears that an appropriate motivational intervention might utilize teacher support to help students envision attainable future selves and develop obstacle strategies.
The current educational predicament for at risk or disadvantaged students is bleak. Urban environments are highly controlled settings (Wallace & Chhuon, 2014) that offer little room for student autonomy. Under the thumb of controlling teachers, there is little buy-in from students (Wallace & Chhuon, 2014). As a result, student autonomy suffers (Deci, Schwartz, Sheinman, & Ryan, 1981). Student growth is also stymied because students rarely receive feedback based in meta-cognition (Van den Bergh, Ros, & Beijaard, 2014). Students of poverty are more likely than their wealthier peers to have lower expectations of future success, fewer opportunities to learn, and more exposure to negative messages about their abilities to succeed in academic realms (Becker & Luthar, 2002). Students form low socioeconomic statuses (SES) are unequally placed in low academic tracks. Students from poverty only have a one in two chance of placement in academically high classes (Burris & Welner, 2005). Even though these inequities are institutionally based, students are the ones blamed for their failures (Darling-Hammond, 2004b). When students try to express their frustration at the system that is trapping them, their efforts are met with negative consequences (Howard, 2002). As a result, disadvantaged students’ interest in academics is vanishing (Becker & Luthar, 2002).

The findings from this author’s needs assessment confirm that students of poverty do not lack motivation, but instead lack workable strategies as indicated by second study. Additionally, they lack workable perceptions of possible future selves. The connections the first study found between teacher support and positive academic outcomes signals an entry point to create effective intervention programming. In order to determine the best methods for potential fixes for these gaps, the following literature review examines and
delineates research concerning interventions intended to improve self-determined 
motivation, perceptions of possible future selves, and obstacle strategy development.

**Review of Literature Related to Proposed Intervention**

High-achieving students are surrounded by peer and adult support (Reis et al., 2005) that emphasizes the importance of academic achievement within the context of cultural backgrounds (Jodry et al., 2004). These students do well when given change-oriented feedback (Carpentier & Mageau, 2013) and the opportunity to reflect on future obstacles (Gollwitzer et al., 2011) as a way to prepare themselves for long-term academic and career success. All of these things are represented by internally regulated academic motivation, which aids the development of high-quality learning (Deci et al., 1991)

One potential solution lies in interventions intending to improve student motivation. As Ryan and Deci (2000b) noted, students with internally regulated motivation were more engaged in school and had better outcomes. It is possible that a student with self-regulated academic motivation developed in high school can continue that motivation post-graduation and also develop strategies enabling the continuation of it. That means creating an intervention designed to target two things: (a) envisioning future selves and (b) creating strategies to overcome obstacles.

As discovered through the needs assessment performed at the Dairy School, teachers are the support system most closely linked to academic success. Interventions increasing long-term motivation must be built within the school setting to improve GPA and aid post-secondary success, even when students no longer have such in-depth support. For that reason, this author will explore the integration of teacher feedback into interventions surrounding future selves and strategy creation.
Possible Selves: Definition and Interventions

Possible selves are the “cognitive manifestations of enduring aspirations and motives” (Leondari et al., 1998, p. 219). In other words, possible selves are the future incarnations students can envision for themselves. These possible future representations can be good or bad. Hoped for selves embody students’ goals and hoped-for successes, while feared possible selves are manifestations of situations students want to avoid (Cadely et al., 2011). Both types of selves can be useful. People work to avoid bad representations of possible selves while developing ways to achieve the goals associated with positive self-predictions (Stevenson & Clegg, 2011). Above all, both representations serve to create motivation.

Yet, simply imagining future selves is not enough to create and sustain internally-regulated motivation (Oyserman et al., 2006). Oyserman and colleagues (2006) identified two possible reasons that simply envisioning possible future selves might not be enough to motivate long-term academic persistence: (a) an incompatibility with other self-perceptions, and (b) difficulty of sustained goal pursuit. Complicating these issues is the notion that students of poverty often fail to realize positive academic future selves because they lack the strategies and support found in higher income students (Oyserman et al., 2006).

Fortunately, the idea of possible selves is not new, and interventions have been tested to determine which ways possible selves can be utilized to aid successful self-regulated motivation.

Possible selves interventions.
Possible selves interventions aimed at improving participant lives across the gamut, from increasing overall happiness, to making people more active, to offsetting scholastic risk factors. Sheldon and Lyubomirsky (2006) discovered that imagining one’s best possible self is a better predictor of happiness than the idea or strategy of counting one’s blessings. While doing research on increasing participants’ level of physical fitness, Murru and Martin Ginis (2010) tested how feared for and hoped for possible selves impacted exercise activity. They found that both visions of future selves increased physical activity levels. In relation to the effect of possible selves on students, Oyserman, Brickman and Rhodes (2007) found that students who took part in a possible selves intervention were able to negate the negative scholastic effect of low parental involvement in their lives. For this dissertation, the two most relevant studies focused not only on the ability of possible selves interventions to increase student performance indicators, but also on the ability of these interventions to be able to be used in an online manner and with the additional construct of strategy creation.

Packard and Conway (Packard & Conway, 2006) reviewed the literature of possible selves research methodologies and found four were utilized most frequently. The four they discovered were (a) structured survey and interview, (b) narrative, (c) visual, and (d) drama, like role-play or visualization. The most commonly used of these were structured survey and interview. Visual and drama were the least utilized. While the researchers found all four methods to be practical and useful for future research, they suggested a mixed methods approach moving forward, to allow for complementary results. Visual methodology is often used in such a complementary way, especially when combined with structured survey or narrative methods. For a high school level
intervention, this might be especially appropriate as a complement because Packard and Conway (2006) note that participants see this method as unique and creative. Visual possible selves representations also add to research analysis because they allow researchers to come to a better understanding of participants’ perceptions of future selves (Packard & Conway, 2006).

In line with a key component of SDT, competence, Strachan, Marcotte, Giller, Brunet, and Schellenberg (2016) tested an online intervention aimed at increasing physical activity through the use of possible selves. Designed as a randomized control study, this research tested the hypothesis that treatment groups would demonstrate more activity than those in the control group and that the self-regulatory possible selves treatment group would have the most physical activity.

Using 244 participants ages 18-64, three groups were created: (a) control, (b) self-enhancing possible selves in which one only imagines a picture of one’s future self, and (c) self-regulatory possible selves, where one imagines a future self and the strategies needed to get there (Strachan et al., 2016). Participants completed surveys to measure their physical activity before the intervention commenced. The self-regulatory group received an additional instruction from the other two, in that they were told they would be imagining steps to achieve their fitness goals. When the intervention began, students read a script that focused on five-10 year fitness goals. After reading the script, participants responded by writing about themselves during that goal window.

To analyze the results of the study, the authors looked at self-reported activity levels and reports of their ability to perform moderate to vigorous activities (Strachan et al., 2016). These reports came and the four and eight week marks of the study. While all
three groups reported similar baseline activity levels, the treatment groups ended with more activity and the self-regulatory group had the most increase in activity ($M_{\text{diff}}$ at 8 weeks = 2.69, $p = 0.014$, $d = 0.424$). Additionally, the researchers found that when looking at participants with the lowest self-efficacy, those in the self-regulatory treatment group reported more physical activity than the control ($M_{\text{diff}} = 3.094$, $p = 0.048$, $d = 0.471$) and treatment ($M_{\text{diff}} = 3.068$, $p = 0.045$, $d = 0.483$) groups despite their limited efficacy.

From this study, it appears that self-regulatory possible selves practice, or thinking about future goals while also planning for the steps needed to achieve those goals, not only improves outcomes but moderates the effect of low self-efficacy, or feelings of competence. Additionally, it implies that online interventions relating to possible selves and strategy creation can be effective.

Layous, Nelson, and Lyubomirsky (2013) tested their possible selves intervention utilizing the principles of Self-Determination Theory. The goal of their study was to see if writing about ones best possible self over the span of a four week intervention (a) improved indicators of happiness, like need satisfaction and positive emotions, (b) online or in-person interventions were more effective, and if (c) participants understood the value of the intervention activity.

Using 131 college students for their experimental study, they used treatment groups to test the difference between online and in-person, the use of testimonial in the intervention, and control (Layous et al., 2013). Most of the students were Asian American (30%) and most were female (72%). The average student was 19 years old. All groups received the same prompts, which asked them to think and write about their
goals for ten minutes. After the first 10 minute session, students were asked to be more specific about steps needed to achieve those goals and write about them for five minutes. The testimonial group first read a fictional testimonial that spoke to the effect that the peer giving the quote had done the same thing last year and had benefitted from the intervention.

Measures used for data collection involved a survey gauging feelings of autonomy, competence, and relatedness, as well as a survey asking students how happy or sad they had been in the past week (Layous et al., 2013). One other survey tested students’ feelings of flow, or their ability to connect to their work. This data was collected during the first and final weeks of the intervention. An ANOVA revealed no significant differences between baseline data in the control and treatment groups.

The results of study showed that the intervention increased feelings of positive affect \( t_{\text{contrast}}(115) = 1.85, p = .03, r_{\text{contrast}} = .17 \) and flow \( t_{\text{contrast}}(117) = 1.83, p = .03, r_{\text{contrast}} = .17 \) (Layous et al., 2013). As for whether an online or in-person intervention worked better, there was no significant difference between conditions. The use of peer testimonial only barely effected one of the three needs, relatedness \( t_{\text{contrast}}(116) = 1.45, p = .07, r_{\text{contrast}} = .13 \) but not the other two, though it did have a positive effect on positive affect \( t_{\text{contrast}}(114) = 1.82, p = .04, r_{\text{contrast}} = .17 \) and flow \( t_{\text{contrast}}(116) = 1.82, p = .04, r_{\text{contrast}} = .17 \). However, when method of intervention delivery was controlled for, there was a bigger positive effect on all the measures except for competence, while the in-person group saw no effect in any area. This might suggest that the use of peer testimonial in an online platform takes the place of a moderator.
This study successfully showed the importance of thinking about one’s best possible self in an online format while also thinking about strategies for overcoming obstacles. An intervention created from this literature should focus on written thoughts about future selves and strategies for accomplishing those futures, and can be done through a series of four prompts. In the case of an online intervention, peer testimonial should be included to take the place of a moderator. In the next section, literature on how to use mental contrasting as a mean of strategy creation will be reviewed.

**Mental Contrasting: Definition and Interventions**

Mental contrasting is the positive derivative of Fantasy Realization Theory. This theory purports that there are two ways to think about the future, either through expectation, which is a person’s predicted future based on past experience, or fantasy, which is a future vision not based on past history (Oettingen, 1999). Within this theory, fantasies manifest in three ways, (a) contrasting the positive potential outcomes with negative images of the possible reality, (b) indulging in the fantasy without thought for the possible reality, or (c) focusing only on the negative with no regard for positive outcomes (Striving, 2001; Oettingen, 1999). These three ways of viewing fantasies determine how or if one will set a plan of action in place for achieving that goal. In the first scenario, mentally contrasting the positive fantasy with possible negative obstacles allows the thinker to create expectations of success, which drive them to act. Since the second is not based on any actual expectations of goal, no realistic actions are taken. In the third scenario, the thinker has no idea on how to act, so they simply do not act (Striving, 2001). For this reason, the act of mental contrasting is the most productive way to manipulate or use fantasies.
**Interventions.** Many interventions around mental contrasting focus on lifestyle impacts. For example, Adriaanse et al. (2010) researched if the strategy would cut down on bad eating habits. In two studies of slightly more than 50 participants, they found that mental contrasting with implementation intentions helped participants become more aware of their penchant for unhealthy snacking. Likewise a study on cigarette use, mental contrasting led participants to immediately take action to lower their intake of cigarettes (Oettingen, Mayer, & Thorpe, 2010). The same results held true for increasing physical activity in women. Stadler, Oettingen, and Gollwitzer (2009) saw immediate differentiation between their control and treatment group, with the treatment group of the 256-participant sample ending with physical activity twice of that of the control group.

In the classroom, interventions using mental contrasting have students imagining a hoped-for short or long term academic future and then contrasting it with an obstacle or obstacles that could impede that end goal (Oettingen et al., 2010). By doing this, students develop self-regulatory strategies to help enable them to make commitments to future goals (Oettingen et al., 2010), most notably with minor or short-term goals (A. Kappes et al., 2012).

In two studies focusing on foreign language acquisition, Gollwitzer, Oettingen, Kirby, Duckworth and Mayer (2011) tested students in elementary and high school to see if there was a way to build academic performance in students, most especially in low-income areas. Participating in the first study were 49 second and third grade students. The second study used 53 middle school students. Gollwitzer et al. (2011) discovered a strategy that helped create and influence the development of motivation, even for students in stressful and transitional situations. Noting that positive thinking is not
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successful for creating long-lasting success (as mentioned in Chapter 2), the authors set out to discover a means of aiding students in creating the goals and motivation necessary to actually achieve an imagined future. Simply being asked to reflect on what stood between them and a goal made students have more success than peers who only utilized positive thinking (Gollwitzer et al., 2011).

For the first study, the participants were a group of German students learning English vocabulary, Gollwitzer et al. (2011) asked elementary students, “Which behavior of yours could stand in the way of you correctly writing seven or more of the English words next to their corresponding pictures?” They did not ask any additional follow-up questions, nor did they instruct students on how to overcome the obstacles they identified. The students who identified obstacles in the path of their goal scored higher than students who merely stated what was good about achieving the vocabulary goal ($M = 4.42$ versus $M = 3.27$).

To incite such goal commitment, students must be taught to consider obstacles (Gollwitzer et al., 2011). Based on their study design, Gollwitzer et al., (2011) hypothesized that this would be successful for students of all academic and mental capabilities. In order to ensure those students of lesser ability levels are able to reap the same benefits as their more capable peers, tasks must be accomplishable. Their second study showed that students using this strategy scored better on measures of reading level ($F = 13.92, p < .001$) and classroom behavior ($F = 4.49, p < .04$). This aligns with Self-Determination Theory, which proposed that this leads to feelings of competence. Gollwitzer’s (2011) intervention not only inspired feelings of competence but also did so in an autonomous way. When used in conjunction with positive thinking, mental
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can be utilized in low income schools to spur academic achievement (Gollwitzer et al., 2011).

It is also effective for students with other needs, as demonstrated by Gawrilow, Morgenroth, Schultz, Oettingen, and Gollwitzer’s (2013) study of mental contrasting and students at risk of ADHD. Basing their study off the theory that self-regulation is predictive of academic success, Gawrilow and colleagues created a research study that used a two-week mental contrasting with implementation intentions, or creating if-then plans, intervention. Students were identified as at risk or not at risk based on parent identification through ADHD diagnostic measures. Additionally, these 116 middle school students were assessed for emotional and behavioral adjustment, cognitive ability, and SES.

The experimental design had one control group go through a two week unit in which the moderator diagnosed the students preferred learning styles for vocabulary words. For example, they determined if a student did best listening to the words on tape. The treatment group had this unit and also used the strategy of mental contrasting. This was a three-step process. Frist they were asked to think about their biggest academic struggle and the best possible outcome from that situation. Next they had to name an impediment that could prevent that positive outcome. Finally they had to list steps to overcome that obstacle.

The results of the study showed that students had lower levels of severity and impairment as determined by the scaled used to measure ADHD indications (Gawrilow et al., 2013). Additionally, students in the mental contrasting group had better management of their scholastic activities as rated by their parents, with the model explaining 15% of
the variance in self-regulation. The results of this study indicate positive results for students involved in an intervention utilizing mental contrasting.

From this information, any proposed written intervention should have students imagine their hoped for futures and then think of an obstacle or obstacles that could get in the way of that future. Reflection on those strategies is needed to hone them. With this in mind, the next focus of this literature review is to look for ways in which teachers or supportive adults can provide feedback on students’ perceptions of their future selves and their goal strategies.

**Change-Oriented Feedback: Definition and Interventions**

Carpentier and Mageau (2013b) said there are two types of feedback. Promotion-oriented feedback is positive reinforcement. Change-oriented feedback is corrective. Positive or promotion-oriented feedback is easier to give and more comfortable for the giver (Carpentier & Mageau, 2013b), however, positive feedback on an initial step when a student is weak or struggling may give students false feelings of adequateness and stall them in progressing (Hattie & Timperley, 2007). Teachers need to be cautious about confusing a student’s want for feedback with the usefulness of providing it. Interestingly, Hattie and Timperley (2007) stated that positive feedback is most useful when people want to do a task and negative feedback is most useful for tasks that people are required to do but do not want to do.

**Positive feedback.** Students of poverty rely on adults to encourage feelings of competence and future success (Reis et al., 2005). Positive feedback can increase feelings of competence (Mouratidis, Vansteenkiste, Lens, & Sideridis, 2008). In Mouratidis et al.’s (2008) set out to study the effect of positive feedback on competence
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through two studies. The first experimental study of 228 middle school students analyzed the results of strong versus mild feedback, while the second correlational study of 202 athletes aged 12-20 used Likert-style surveys to assess students perceptions of SDT constructs, as well as perceived feedback and well-being. These studies of physical education students, when students were praised for success on a task, they felt more competent and in turn were more interested in the task. Positive competence feedback also led to students being more inclined to participate in future activities (Mouratidis et al., 2008).

Yet the study also showed there is a fine line teachers must walk with this type of feedback. Mild positive feedback actually had a negative effect on students’ feelings of competence. This was because it undermined high expectations. This was the case for both motivated and amotivated students (Mouratidis et al., 2008). Thus, change-oriented feedback might be the better option for teachers in culturally diverse schools.

Change-oriented feedback. There are pros and cons to change-oriented feedback, but it can serve to deliver two positive outcomes: motivation and guidance (Carpentier & Mageau, 2013b). Because change-oriented feedback is often difficult, strategies are needed for those who would like to utilize its autonomy-supportive benefits (Carpentier & Mageau, 2013).

Autonomy as a result of change-oriented feedback. Change-oriented feedback can be autonomy-supportive by focusing on the needs and goals of those involved (Carpentier & Mageau, 2013). As Carpentier and Mageau (2013) discovered in a study of the effects of coaches’ feedback to athletes, change-oriented and autonomy-supportive feedback are both empathetic and offer choice. For their studies, they used a model of
change-oriented feedback in which the feedback was clearly aligned with objectives, avoided personal statements, offered suggestions, was immediate, happened privately, and was delivered with a kind tone of voice. The feedback did not shame or demoralize athletes and it avoided being controlling. In two studies, this autonomy-supportive feedback led to better motivation and higher self-esteem in athletes. These results were detailed in Chapter 2’s literature review.

An additional study by Carpentier and Mageau (2016) used qualitative data to analyze coaches’ change-oriented feedback on 49 athletes. These athletes were aged 10-24, had worked with their coach for an average of two years, and had participated in their sport for an average of 5.79 years. Over the course of the study, they kept diaries about the feedback, in which the researchers looked for indications of motivation, confidence, and satisfaction in line with the three needs of SDT.

What they discovered was that the quality of feedback, and not the quantity of it, positively and significantly impacted motivation ($\gamma = .25, p = < .05$). Quantity did impact self-confidence as defined by Revised Competitive State Anxiety-2 subscale, with higher levels of confidence being reported ($\gamma = .14, p = < .05$). Additionally, when athletes received more change-oriented feedback than before, they felt more autonomous ($\gamma = .42, p = < .01$). The same was true for relatedness ($\gamma = .31, p = < .001$). When studying promotion-oriented feedback on athletes, an increase was not correlated with relatedness ($p = < .00$).

Though studies of reviews of change-oriented feedback are limited, research on components of this type of feedback show that it is facilitative rather than directive (Van den Bergh et al., 2014). As Hattie and Timperley (2007) noted, when students develop
autonomy they are not as dependent on teachers for feedback but instead rely on themselves to monitor their development. Perhaps this is because autonomy-supportive feedback is more effective and more efficient (Carpentier & Mageau, 2013). Those who use it have to use it less frequently.

**Delivery of change-oriented feedback.** Because of the goal of change-oriented feedback is to create autonomous students, delivery is key. The manner in which feedback is given is more important than the frequency with which it is given (2013). Respectful feedback is given privately and considerately, with an appropriate tone of voice (2013). The type of language used when giving feedback is important for supporting autonomy (Van den Bergh et al., 2014).

Because of the limited literature related to change-oriented feedback interventions, especially when dealing with its use in schools serving students of poverty, the researcher looked to see how change-oriented feedback could particularly align with the needs of these students. For that reason, literature on culturally responsive pedagogy was also reviewed in order to understand what respectful and considerate feedback might look like so that the author’s intervention would effectively target all three of SDT’s needs.

**Culturally Relevant Pedagogy and Responsive Feedback**

Typically, American classrooms are set up from a White, or Eurocentric viewpoint (Howard & Terry, 2011; Stevens et al., 2006). Not only does this negatively impact students (Becker & Luthar, 2002; Burris & Welner, 2005; Darling-Hammond, 2004), it also affects teachers’ beliefs in their ability to positively impact students from low SES (Hoy & Spero, 2005). This then circles back to impact students, for teachers
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with lowered efficacy are more likely to show bias toward socioeconomic status than those with higher levels (Tucker et al., 2005). However, culturally relevant pedagogy helps teachers feel they can reach their students and empower them (Tucker et al., 2005).

**Defining culturally relevant pedagogy.** Oftentimes, culturally relevant pedagogy is confused with awareness of popular culture. Students in Wallace and Chhuon’s (2014) study disengaged from this approach when they saw teacher pretending to like a famous rap artist to ingratiate themselves. Instead, what culturally responsive teaching does is utilize the home cultures of students to make education more appealing to them (Gay, 2002). This type of classroom embodies a set of professional, political, cultural, ethical, and ideological disposition that supersedes mundane teaching acts, but is centered in fundamental beliefs about teaching, learning, students, their families, their communities, and an unyielding commitment to see student success become less rhetoric, and more of a reality. Culturally responsive pedagogy is situated in a framework that recognizes the rich and varied cultural wealth, knowledge, and skills that diverse students bring to schools (Howard & Terry, 2011).

Culturally responsive pedagogy does not translate into simply celebrating different culture’s holidays, which many schools and teachers understand at the baseline level (Bennett, 2013). Using students’ cultures, this pedagogy helps students align their skills with those needed to be academically successful (Bennett, 2013; Howard & Terry, 2011). This helps students overcome preconceived notions about students from low socioeconomic backgrounds (Howard & Terry, 2011). To do this, teachers need to start with empathy for cultures outside of their own (Bennett, 2013), which enables them to
become aware of subtle biases they might have (Parks & Kennedy, 2007). The best way
to help teachers get to this point is by modeling culturally relevant pedagogy (Cantrell &
Hughes, 2008).

To begin, teachers can be guided in developing relationships with students and
showing concern for their goals and aspirations (Bennett, 2013; Howard & Terry, 2011).
This means helping students create and strive for their educational goals (Howard &
Terry, 2011). Maintaining relationships in which students share their goals and teachers
provide feedback is one way to do this. Teacher’s feedback should involve verbal
affirmations which shows the teacher cares, but also holds students to high expectations
(Howard, 2002). By using this kind of culturally responsive feedback, students will gain
confidence in themselves as learners (Gay, 2010).

To incorporate change-oriented feedback that will help students hone strategies to
overcome obstacles, interventions utilizing feedback should seek to ensure several things.
First, teachers must be respectful in their feedback. Second, they must give students
options for how to overcome any obstacles they face. Finally, the feedback should seek
to connect students to teachers, and this can be done by making sure teachers are
considerate of the situations from which students are operating.

**Self-Determination Theory in an Online Setting**

Literature reviewed earlier in this chapter demonstrated the effectiveness and
validity of an online intervention utilizing possible selves theory. The efficacy of an
SDT-derived intervention must also be determined.

Chen and Jang (2010) wanted to analyze how the Self-Determination Theory
played out in online learning. Their rationale was that SDT has been successful in so
many areas, but has rarely been studied in or applied to online settings. The authors believed that SDT would be a good fit for motivating online learners because the three main constructs are facets needed for online environments. At the time of their study, the authors found no previous research on relatedness, one of the three SDT constructs, in online learning environments and only limited research on competency, another core construct. Because of that SDT research in line with web-based learning seemed a necessary next step. Chen and Jang also thought that since SDT has been so vigorously tested, that the strategies already embedded into the theory after years of research would be useful to and easy to implement in the online setting. Their hope was to test this model for future applications with the hypothesis that the level of self-regulated motivation found in SDT predicted achievement.

To study this, they looked at 267 students in two separate online college level special education teaching programs. Most of the students who took part in the study were female, and the mean age of participant was just under 39. Of these students in the two programs, they participated in several different courses. The nature of the online courses required students to read online, take quizzes, take part in live and asynchronous discussions, and submit a final project.

Data was collected from Likert-scaled surveys were sent to students via the internet, and posted on their course sites (Chen & Jang, 2010). The measures on these surveys were scales amended and compiled to assess all the variables needed to answer the research study’s hypothesis. These measures dealt with (a) autonomy, and how supportive the instructors were, through things like providing choices; (b) competency support; (c) relatedness or feelings of community; (d) feelings of competence; and (e)
academic motivation. Additionally, end-of course grades were collected as was information from an online class satisfaction survey.

What they discovered was that need satisfaction was the best predictor of academic outcomes ($\beta = .80$, $p = .05$) and also self-determination ($\beta = .14$, $p = .05$) (Chen & Jang, 2010). When students felt that the SDT constructs of autonomy, competence and relatedness were in place, their self-regulation improved. The researchers noted that for online courses to be effective, students needed to feel as if the program was focused around them and gave them the freedom to express themselves as individuals.

Chen and Jang (2010) concluded that these results showed that motivation is multifaceted, and inspiring and supporting it in online mediums requires multiple means of support, as done through the three needs of SDT. They warned online instructors and program developers not to judge students as motivated or not motivated because of this. In order to work, online programs need to provide students with well-thought and structured supports, and they also need to ensure that mentors or teachers understand their students’ needs. Thus it appears that an online intervention can be implemented successfully.

**Proposed Solution and Project Objectives**

This author hypothesizes that students from backgrounds of poverty will not respond to motivational interventions in the same manner as students from higher SES, because they do not have the same social and support networks as students from more prosperous settings. Additionally, because disadvantaged students see setbacks as failure, it is imperative that interventions combat this notion. Because of this, simply allowing students to envision possible future selves is not enough. Students must be
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taught appropriate ways to use mental contrasting to identify potential struggles and
develop useful strategies. Change-oriented teacher feedback may positively impact thisproblem.
CHAPTER 5 – INTERVENTION PROCEDURE AND PROGRAM EVALUATION

Students from backgrounds of poverty do not lack motivation. The needs assessment in this dissertation suggests students want to do well academically and have support systems in place – such as coaches and parents – that also want them to do well academically. However, as shown in previous chapters, these students are not situated in the same environments and situations as students from other socioeconomic statuses, and lack certain inputs that lead to positive post-secondary outcomes, such as non-cognitive skills (Liu, 2016; Smedley, Myers, & Harrell, 1993) and positive goal orientations (Caraway et al., 2003). Additionally, the impact of stress on students from low SES is more likely to make them drop out of school (Karimshah et al., 2013).

Guided by the literature in Chapter 4, this author developed a pilot intervention program named Relate to Motivate (R2M). It was designed to use teacher-provided change-oriented feedback to students regarding their visions of possible future selves. The program was assessed for effectiveness through the lens of the theories used to create it: the Self-Determination Theory, the strategy of mental contrasting, which derives from fantasy realization theory, and the theory of possible selves, as well as the aid strategy of teacher feedback. All of these, when combined in the manner presented by this author have the potential to significantly prepare students for college and career readiness. Figure 6 is a pictorial representation of how students from backgrounds of poverty are stymied by scholastic factors associated with their socioeconomic status. Through envisioning possible future selves while using mental contrasting and teacher-provided change-oriented feedback to create appropriate strategies for achieving these goals, it is
possible that students can overcome these obstacles to achieve college and career readiness as well as other positive outcomes.

Figure 6

*Intervention Strategies for Enabling Student Success*

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**Research Questions and Hypotheses**
To guide this research study, the following research questions were developed:

### Table 19

**Intervention Research Questions**

<table>
<thead>
<tr>
<th>RQ1</th>
<th>Do students’ perceptions of future selves predict or relate to academic outcomes? If so, to what degree?</th>
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</thead>
<tbody>
<tr>
<td>RQ2</td>
<td>In what ways does mental contrasting aid strategy development?</td>
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<td></td>
<td>Does writing about possible future selves encourage feelings of competence? If so, to what extent?</td>
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<tr>
<td>RQ3</td>
<td>To what extent does change-oriented feedback help or hinder student feelings of future success and competence?</td>
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<tr>
<td></td>
<td>In what ways, if any, do students receiving teacher feedback develop internally regulated motivation differently than peers who do not receive feedback?</td>
</tr>
<tr>
<td>RQ5</td>
<td>What are student perceptions of the intervention?</td>
</tr>
<tr>
<td></td>
<td>In what ways does an online software system affect student intervention interaction?</td>
</tr>
</tbody>
</table>

From these, several research hypotheses were created.

### Table 20

**Intervention Hypotheses**

| H1 | Positive perceptions of future selves are positively correlated with better academic outcomes. |
RELATE TO MOTIVATE

H2 Students who participate in mental contrasting are better able to create strategies to overcome obstacles than students who only envision possible selves.

H3 Writing about possible future selves improves student perceptions of competence.

H4 Change-oriented feedback increases student perceptions of future success and competence.

H5 Students who receive teacher-provided change-oriented feedback report higher levels of internally regulated motivation than students who do not.

H6 Students find online intervention software engaging.

This chapter will describe the components of R2M’s design and implementation, as well as the tools, procedures, and data collection plans that were used in the implementation of the intervention and the evaluation its effectiveness.

Method

The pilot’s experimental design featured two groups, one receiving treatment and one control group not receiving treatment. Because of the small sample size and relative limits imposed by the context and nature of the pilot study, the evaluation utilized an explanatory mixed methods design, or two-phase model. In the first phase, quantitative and qualitative data is collected within the program’s implementation. In the second phase, additional qualitative data is collected to help explain any initial findings. Qualitative data from the initial phase will also be used in this manner. The following sections will detail the sample, tools, and procedure for the study.
Overview of Timeline

Beginning before Thanksgiving break, teacher volunteers were solicited and student solicitation began. After Thanksgiving break, volunteer solicitation, consent form distribution and collection, and survey collection took place. Upon students’ return from winter break, the pilot program began, and ran for four weeks. These four weeks fell over the end of the second marking period and the beginning of the third. After the intervention concluded, there was a small window before students and staff left for Presidents’ Day break. End-of-intervention survey collection and focus groups took place before this break. Table 21 details the steps of implementation and the timeframe utilized.

Table 21

**Timeline of Intervention**

<table>
<thead>
<tr>
<th>Marking Period Window</th>
<th>Calendar Window</th>
<th>Intervention Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Between Thanksgiving Break and Winter Break (Three Weeks)</td>
<td>Recruitment</td>
</tr>
<tr>
<td>Second Marking Period</td>
<td>First and Second Week Following Winter Break</td>
<td>Final Stages of Recruitment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Consent</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pre-Intervention Instrumentation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Training/Orientation Video</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kick-off of Intervention</td>
</tr>
</tbody>
</table>
Though not listed in the timeline above, to aid evaluation of this pilot implementation, field notes and email correspondence was kept to document the progression of the program. This was done in order to highlight any issues, be they weaknesses or strengths that arose through the course of the program. Additionally, this served to evaluate the fidelity of the implementation.

**Summary of Sample and Selection Procedures**

In order to recruit teacher participants for the pilot, the researcher emailed approximately a dozen teachers. This email, which can be seen in Appendix E, detailed the two and a half hour time commitment, online nature of the program, incentives, and specific details of participation.

Once teacher volunteers had been recruited, the researcher accessed teacher rosters from the school’s database when applicable, so that students could recruited. For
the participants in the study who were not classroom teachers, the author requested their case loads, or lists of students they work with in their role. Because Self-Determination Theory and change-oriented feedback highlight the link between student/teacher relationships and increased motivation, this study was designed so that students involved in the study were familiar with teacher participants. Over 600 student names were compiled, many of these shared between teachers. The researcher emailed all students to solicit volunteers. The student recruitment email can be found in Appendix F. Once students volunteered, the researcher confirmed receipt of their response and asked students to complete the assent form by coming to the teacher’s classroom and completing the assent form in person with the researcher present. The assent form, in Appendix G, was vetted by special education colleagues to ensure its readability for students at the school. In addition, when students came to sign the form, the researcher asked students if they would like the assent form to be read aloud to them or if they had any questions. This process will be explained in more detail in the following sections.

Treatment and control group. Because some participating teachers had very small rosters compared to other participant teachers, when possible, students who had more than one teacher in the study were spread to the smaller class-size teachers to allow for an even distribution of students. Within each teacher’s student caseload, up to six students were then selected using the random number generator found on random.org. The remaining five students were placed in the control group. This process will be further elucidated in the following sections.

Participants. The next two sections detail the participation and demographic makeup of participants.
Selection and considerations. Eight teachers, one teacher/learning support teacher, one reading specialist, and one career counselor volunteered to participate in the study for a total of 11 adult participants. Students on the rosters and caseloads from these eleven adults were sent solicitation emails. Seventy-two students volunteered to participate in the study. Of those, 53 followed through by taking the initial survey. These 53 were divided into 12 groups: teacher groups ranged in number from one student to six. The control group had five students in it. Thirty-nine took the post-intervention survey, including one student who dropped out in the middle of the intervention. Only 29 of these students completed the pre-intervention survey, the post-intervention survey, and the intervention itself. Reasons for study attrition are wide and varied. As an example, some students opted to drop out due to workload and other commitments, some were expelled from school or admitted to health facilities. One student started a new college curriculum midway through the study while another was away for an extended field trip. Two adult participants did not finish the requirements of the intervention; however, they did complete the post-survey.

Student participant demographics. Table 22 displays student demographics for this study. Of the students who completed the final survey, 27 identified as White, 14 as Black, four as Hispanic/Latino, and five in other categories. Those identifying as female made up 66% of the respondents. Most students reported taking general education courses, though five students were enrolled in some supported classes while 20 were involved in honors or AP courses. Slightly over half the students identified themselves as A students on their pre- and post-intervention surveys. The researcher’s own analysis of students’ second and third marking period grades showed that 54% of students were in
the A range. This lends reliability to students’ self-report of their grade averages. Grade level distribution was relatively even, with nine ninth graders, 10 10th graders, 11 11th graders, and nine seniors. Because of the even distribution of grade levels, for this dissertation, statistical results will be presented to the 100th decimal place.

Table 22

*Student Participant Demographics*

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
<th>Percent</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Native Hawaiian or</td>
<td>2.6</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Other Pacific Islander</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black/African-American</td>
<td>35.9</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>69.2</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>10.3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>American</td>
<td>2.6</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Indian/Alaska Native</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>7.7</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>30.8</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>66.7</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>2.6</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Course Level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supported Classes</td>
<td>12.8</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>64.1</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Honors/AP</td>
<td>51.3</td>
<td>20</td>
<td></td>
</tr>
</tbody>
</table>
**Adult participant demographics.** As for teacher participants, the majority were aged 35-39, with the range spanning from 30-34 to 60-64. Nine teachers identified as White, one as Hispanic/Latino, and one as American Indian/Alaska Native. Of the eleven teachers, nine participants were women. The level of students that these teachers work with ranged from supported classes to honors level, with many teachers having multiple levels. Table 23 shows these demographics.

Table 23

### Adult Participant Demographics

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
<th>Percent</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnicity</td>
<td>Asian</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Native Hawaiian or</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Other Pacific Islander</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**RELATE TO MOTIVATE**

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black/African-American</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>White</td>
<td>81.8</td>
<td>9</td>
</tr>
<tr>
<td>Hispanic/Latino American</td>
<td>9.1</td>
<td>1</td>
</tr>
<tr>
<td>American Indian/Alaska Native</td>
<td>9.1</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>27.3</td>
<td>3</td>
</tr>
<tr>
<td>Female</td>
<td>72.7</td>
<td>8</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Level</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supported Classes</td>
<td>54.6</td>
<td>6</td>
</tr>
<tr>
<td>General</td>
<td>81.8</td>
<td>9</td>
</tr>
<tr>
<td>Honors/AP</td>
<td>54.6</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 and Under</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>25-29</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>30-34</td>
<td>9.1</td>
<td>1</td>
</tr>
<tr>
<td>35-39</td>
<td>45.5</td>
<td>5</td>
</tr>
<tr>
<td>40-44</td>
<td>9.1</td>
<td>1</td>
</tr>
<tr>
<td>45-49</td>
<td>9.1</td>
<td>1</td>
</tr>
<tr>
<td>50-54</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>55-59</td>
<td>9.1</td>
<td>1</td>
</tr>
<tr>
<td>60-64</td>
<td>9.1</td>
<td>1</td>
</tr>
</tbody>
</table>
Note. $N = 11$ for all demographic categories, except type of class, since many teachers teach multiple sections of the same subject.

**Tools (Assessments/Measures)**

This section summarizes the types of data collected, and the rationale for the use of these measures and assessments. More detailed information on collection procedures will appear later in this chapter while detailing procedural information.

**Achievement data.** In order to help determine if perceptions of competence and achievement scores covary, grade point average data was collected for the second and third marking period. This was collected because the intervention spanned the beginning and end of those two marking periods – a time when teachers often do not enter the same number of grades as in the middle of the marking period. The use of teacher-scored effort points was also utilized to determine a covariation between R2M and internally regulated academic motivation.

**Pre-and post-intervention surveys for students.** Three Self-Determination Scales were modified and merged for pre- and post-testing students in order to align with the research questions, scope of the intervention, and design of the program. The Perceived Competence Scale (Williams & Deci, 1996) consists of four questions that were modified to relate to perceptions of future success. Table 24 shows a sample modification of the survey. This scale was previously used for other types of participants, such as medical students and their competence in their subject matter (Williams & Deci, 1996).

Table 24
Survey Modification Sample

<table>
<thead>
<tr>
<th>Scale</th>
<th>Original Question</th>
<th>Modified Question/Reasons for Modification or Elimination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Competence Scale</td>
<td>I feel confident in my ability to learn this material.</td>
<td>I feel confident in my ability to manage college/a job after high school.</td>
</tr>
</tbody>
</table>

The Academic Self-Regulation Questionnaire is a 32 question Likert-scaled survey that assesses student motivation for school work (Ryan & Connell, 1989). It was used in its entirety. Finally, the Activity Perception Questionnaire (Deci, Eghrari, Patrick, & Leone, 1994), which is a subscale of the Intrinsic Motivation Inventory previously used to assess motivation with a computer program were added to the post-test and modified to specifically pertain to writing about and thinking about future goals. This instrument contained 25 questions. See Table 26 for example questions from these surveys. Appendix H contains the full survey.

Several constructs were operationalized within these scales. Table 25 lists the constructs measured within each.

Table 25

Operationalized Constructs Within Intervention Instruments of Measurement

<table>
<thead>
<tr>
<th>Scale</th>
<th>Constructs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Competence Scale</td>
<td>• Feelings of Competence in Regards to a Specific Activity (in this case, future goals)</td>
</tr>
<tr>
<td>Academic Self-Regulation Questionnaire</td>
<td>• Types of Motivation</td>
</tr>
</tbody>
</table>
Intrinsic Motivation Inventory

- Interest
- Value
- Choice (Autonomy)

Pre-and post-intervention surveys for students. Teachers received two pre-and post-intervention surveys. The first instrument, Perceptions of Students’ Future Orientations, was created by the researcher to gauge perceptions of students’ future selves from a source outside of the student. It was designed to serve as a gauge of teachers ideas about students’ perceptions of possible selves, and how these ideas evolved, or did not evolve, over the duration of the intervention. See Appendix I for the full scale. The second instrument is Gibson and Dembo’s (1984) Teacher Efficacy Scale. This Likert-scaled instrument assessed teachers’ feelings of efficacy. This survey was included for the sake of aiding fidelity of implementation of the intervention, since research has shown student motivation and teacher efficacy are highly correlated (Klassen, Tze, Betts, & Gordon, 2011; Yeo et al., 2008; Tournaki & Podell, 2005). This scale is found in Appendix J. Sample items for both student and teacher surveys are found in Table 26.

Table 26

Sample Survey Items

<table>
<thead>
<tr>
<th>Respondent</th>
<th>Instrument</th>
<th>Sample Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student</td>
<td>Perceived Competence Scale</td>
<td>• <em>I am capable of learning</em> material in high school that is*</td>
</tr>
</tbody>
</table>
necessary to succeed in college or the workforce.

**Academic Self-Regulation Questionnaire**
- Why do I do my homework?
  - Because it's fun.
  - Because I want to understand the subject.
  - Because it's important to me to do my homework.

**Intrinsic Motivation Inventory**
- I believe this activity could be of some value to me.
- I did this activity because I had to.

**Perceptions of Students’ Future Orientations Questionnaire**
- Students have positive perceptions of their futures.

**Teacher Efficacy Scale**
- When I really try, I can get through to most difficult students.
- Some students need to be placed in slower groups so they are not subjected to unrealistic expectations.

Teacher
Focus groups. Two focus groups were held at the close of the intervention. One involved teachers and one involved students. Each took place afterschool in a private classroom. Questions asked in this session added to the qualitative analysis of the data, particularly for research questions associated with software efficacy and perceptions of the intervention, the internalization of teacher feedback, and students’ perceptions about competence, creation of strategies. More details on these groups are provided in the data collection section of this chapter.

Procedure

The following section details the intervention as well as explication of data collection processes and analysis. It features an in-depth explanation of the tools summarized above, as well as pertinent information logistics, timing, and security.

Intervention methodology. The next sections provide a general overview of the intervention. Then, following the overview are descriptions of the specifics of software, student and adult activity, and incentives.

General overview. The intervention spanned the course of four weeks, following the successful four-prompt study conducted by Layous, Nelson, and Lyubomirsky (2013). Each week began with a prompt uploaded to the R2M software. Email communication during the course of the intervention was the main means of communication. Students received an email alert each time a prompt was ready (Appendix K). Teachers also received an email with instructions, and the software sent an automated alert stating *A new prompt submission is available on R2M. Please review and respond by the end of the week* when student responses were available for viewing. Because this is a web-based intervention, both students and teachers could complete the
program on any web-supportive electronic device during a time that is convenient during that week. Analysis revealed that teachers utilized laptops for this process while students alternated between laptops/desktop computers and mobile devices.

Each week the developer generated a report that listed which students had completed a response, which did not, and which prompts had received feedback from teachers. Students who did not complete their prompts by Wednesday received an email reminder (Appendix K). Likewise, teachers who did not respond by Sunday received an email reminder (Appendix K). These steps were taken in an attempt to ensure fidelity of implementation by helping the prompt/feedback loop happen within the confines of the intervention’s specified time frame and structure.

**Software.** Students and teachers completed the intervention via web-based, secure-access software. It was designed by the researcher and programmed by Matthew Duvall, who was a doctoral candidate in Drexel University’s School of Education at the time of implementation and is a career-trained computer programmer. The software program was developed using Microsoft .NET with a MySQL database. The software was housed outside of Dairy School’s technological infrastructure on a secure server. The database is password protected. There were three types of users allowed in the software: (a) administrator, (b) teacher, and (c) student. Data access was restricted within each role. For example, students only had access to their work and feedback; teachers only had access to their assigned students’ work, and the administrator had access to all data. The researcher, developer, and the researcher’s adviser were the only ones with administrative privileges. Each user had a login name and passcode. There is SSL encryption for data online.
Before launching the pilot program, multiuser testing was done to ensure the usability of the software. For this, several test users were given test accounts and logged on simultaneously. These testers were a fellow Johns Hopkins colleague, the researcher, a coding and web development expert, and a former therapist. The developer was logged in as an administrator during this time. Glitches were discovered, screenshotted, and emailed to the developer in real time. The developer was able to fix these glitches, and also extend a time-out issue, which was a security feature, from four minutes to seven.

**Student activity.** Students cycled through four rounds of the program. Before the process began, they received an assent form (Appendix G) outlining what was being requested of them. As noted earlier, students had the choice of having this form read aloud to them. The assent language also appeared as part of the survey instrumentation and software. Because the Dairy School operates *in loco parentis*, and receives research consent from guardians upon each students’ entrance to the school, no parental consent was required as it was given by the school after a thorough vetting and approval of the pilot intervention. Assent was referenced at each stage of the intervention so that students were aware of their rights in participating in the study throughout the study. Additionally, students watched a seven-minute screencast that walks them through the process (Appendix N).

Once assent was granted, students were emailed a link to the pre-intervention survey, which was housed online on the web service Survey Gizmo. At the beginning of every session, students received an email reminding them of the process (Appendix K). Each week students read a very brief testimonial about why and how the intervention works. These testimonials can be found in Appendix P. The use of testimonial is
important part of the program due to findings that showed the optimal way to deliver a future selves intervention included the use of testimonial, as noted previously in Chapter 4 (Layous et al., 2013).

Beneath the testimonial, students in the treatment group read a statement prompting them to think about possible futures and employ the strategy of mental contrasting. One sample treatment prompt was: *What is one obstacle that might prevent you from doing well at college, in the military, or at your first job? What are some ways you could overcome that obstacle?* The full list of prompts are detailed in Appendix P.

Students in the control group read no testimonial, and their screen went right to a prompt asking them to write about their future. Students in the control group received a generic prompt. These four prompts are: (a) *What are your plans for the future?* (b) *What do you expect your life to look like in 10 years?* (c) *What does success look like to you?* (d) *What does failure look like to you?*

Prompts for both the treatment and control groups underwent review by peers to ensure face validity. These peers included special education specialists, academic researchers, and in-service teachers. In the focus groups, prompts were again evaluated, with the researcher asking for feedback on the prompts.

When both groups finished writing, the computer program asked them to answer three Likert-scaled questions to assess the fidelity of the online system. The questions were: (a) *The testimonial was interesting,* (b) *I understood the writing prompt,* and (c) *I was able to respond to the prompt.*

**Adult activity.** At the beginning of the program, the researcher delivered and collected consent forms from adult participants. Teachers were then given a link to the
pre-intervention survey on Survey Gizmo. Because of an upload error, only part of this instrumentation was uploaded. This error was noticed immediately, teachers were informed, and were asked to complete the second piece of the survey, also on Survey Gizmo. Next, teachers were asked to watch a 10-minute explanatory video that detailed both the rationale for the intervention and their responsibilities (Appendix O). As with students, teachers could access this link at any time throughout the intervention. Once students began responding to prompts, teachers were alerted via an auto-generated email message. Initially, teachers were asked to log on to the system and read the students’ responses by the end of the week. After feedback from teachers requesting more time to become familiar with the system and respond to their prompts, extensions were granted. These extensions were honored throughout the course of the intervention, with teachers being asked to respond as soon as possible. After reading responses, teachers added comments to the three answer stems by selecting a stem they felt fit best, completing stems, and adding their own relational story. These stems varied depending on prompt. One example is: (a) *When starting a new job, it’s difficult to...* OR *Friends and family often don’t realize...*, (b) *When something like this happens, it’s helpful to...* OR *When you are worried about not being able to achieve a goal, it’s important to...*, and (c) *Write a few sentences about a similar situation you were in and how you overcame it.* A sample change-oriented response provided to teachers at the beginning of the program was: *Students often struggle at college when they study alone. Have you ever thought about enrolling in a college study group? When you get to campus, you can ask your adviser if there are study groups on campus.*
When teachers completed all responses, the system asked them to answer the following two fidelity questions: (a) Student responses seem to align with the purpose of the intervention and (b) I was able to provide appropriate feedback to student responses. The full course of prompts and constructed responses can be found in Appendix P. For both teachers and students, unanswered prompts and fidelity questions appeared on the home screen once they logged on to the R2M software.

**Responsibilities and expectations.** Table 27 outlines the stages of the intervention, time expectations, and participants’ responsibilities as designed by the pilot study.

**Table 27**

*Intervention Overview*

<table>
<thead>
<tr>
<th>Timeframe</th>
<th>Students</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Before Start</strong></td>
<td>Complete assent. <em>Five minutes</em></td>
<td>Complete consent. <em>Five minutes.</em></td>
</tr>
<tr>
<td><strong>Week 1</strong></td>
<td><strong>GROUPS TREATMENT (T) AND CONTROL (C)</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Receive email instructions.</td>
<td>• Receive alert when student has completed a prompt.</td>
</tr>
<tr>
<td></td>
<td>• Take pre-test and complete assent. <em>30 minutes</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Complete online training. <em>15 minutes</em></td>
<td>• Respond to student responses. <em>30 minutes</em></td>
</tr>
<tr>
<td></td>
<td>• Read and respond to first prompt. <em>15 minutes</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Complete online training. <em>15 minutes</em></td>
<td></td>
</tr>
</tbody>
</table>
**RELATE TO MOTIVATE**

<table>
<thead>
<tr>
<th>Weeks 2 and 3</th>
<th>GROUP T</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>• Receive alert when teacher has responded.</td>
<td>• Receive alert when student has completed a prompt.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Review feedback. <em>Five minutes</em></td>
<td>• Respond to student responses. <em>30 minutes</em></td>
</tr>
</tbody>
</table>

**GROUPS T AND C**

- Receive email reminder.
- Read and respond to second prompt. *15 minutes*

<table>
<thead>
<tr>
<th>Week 4</th>
<th>GROUP T</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>• Receive alert when teacher has responded.</td>
<td>• Receive alert when student has completed a prompt.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Review feedback. <em>Five minutes</em></td>
<td>• Respond to student responses. <em>30 minutes</em></td>
</tr>
</tbody>
</table>

**GROUPS T AND C**

- Receive email reminder.
- Read and respond to second prompt. *15 minutes*
- Complete post-test. *30 minutes*
- Receive thank you email.

**After Completion**

- Voluntary Focus Group Interview *One hour*
- Voluntary Focus Group Interview *One hour*
Incentives. Both teachers and students were offered incentives to complete the program. In the fall of 2015, Dairy School administration polled students to discover which incentives most appealed to students. The top result was Wal-Mart gift cards. To encourage participation throughout the course of the pilot, after each session, four random students were selected to receive a $5 gift card. Likewise, after each session, one teacher was randomly selected to receive a gift card. Both selections were made using the random number generator at Random.org.

Data collection, storage, and procedures. The next sections discuss the manner in which data was collected and stored. It also discusses the processes implemented to obtain quality data collection and analysis.

Data collection – quantitative. All pre- and post-test surveys were given via the use of the online survey system Survey Gizmo. There was no option for paper-based survey completion. Students and teachers were allowed to complete the surveys at their leisure during the time frame provided before the opening of the first prompt. Email reminders were sent to volunteers who had not completed the survey as the time approached to begin the study. Students were identified by system-generated codes.

Student writing and responses to software validity questions were stored on the secure web-based software program created by the researcher and programed by the software administrator. Students will be identified by a four-digit code. In each user’s
account, they were greeted by name, however, reports within the software did not report adult or student names, nor did it connect names to responses.

SPSS was used to analyze all data. It was electronically exported when possible or manually entered when needed. Survey Gizmo was also used to generate descriptive statistics.

*Data collection – qualitative.* Student and teacher responses were stored in the R2M system. At the conclusion of the intervention, the author was able to compile these responses in order to code them, which was completed by hand using printouts of the responses. A description of the coding methodology is in Appendix Q.

Field notes and email correspondence records were kept during the duration of the implementation, from the time of first recruitment through the follow-up of the study. Notes were recorded as soon as the researcher was able to document them. In addition to helping analyze the intervention, the author used these for self-reflection throughout the course of the pilot study.

After the intervention, students and teachers received a thank you email (Appendix K) which also asked for volunteers to participate in two focus groups, one for students and one for teachers. After working with interested participants to select a date, an additional call for volunteers was sent out with the date of the group in case anyone else was interested in participating. The use of qualitative data collected from focus groups allowed for a more substantive analysis of the program’s effectiveness and the validity of the implementation as well as the software’s design. Because this was a small pilot study with potentially small effect size, the mixed methods approach allowed for a more thorough and intuitive investigation of effectiveness.
These groups took place for one hour each after school had concluded for the day. Because this took place after school, snacks were provided for students and adults. While interest was high in attending the group, because it occurred before a multiple-day school break, some students and teachers could not align their schedules in order to attend. The best fit date was picked and six teachers signed up to participate. However, only four participated, because one teacher had a family emergency and another was called away on school-related business. Six students participated. One limitation of this group was that no males were able to participate, since the only male volunteer had a school-related conflict that kept him from participating in any dates most of the other participants could attend.

The researcher used a moderator’s guide to structure the groups. The guides can be found in Appendices L and M. The sessions were recorded on the researcher’s school-issued iPad, using the application Voice Record Pro. This app was used on recommendation from the Dairy School’s learning technology department to meet the needs of the focus groups. Upon completion of the focus groups, transcripts were typed. Once the transcripts were completed, both groups were allowed to review them to eliminate any issues with interpretation.

The use of Voice Record Pro allowed participants to hear parts of their sessions played back during the session – as the student groups asked -- and provide the researcher with additional or amended comments, which helped eliminate obscurities while transcribing the session. Coding was completed by hand, using printouts of the transcripts. The coding methodology can be found in Appendix Q.
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**Data storage.** Student and adult response data was stored on the secure R2M program. One additional backup copy of compiled responses was stored on a password-protected folder on Johns Hopkins’ University’s cloud-based storage, as was focus group data and field notes. One additional backup copy of each item was housed on the researcher’s password-protected laptop or iPad (for audio recordings). Personally identifying information was housed on Dairy School’s secure servers and nowhere else. After three years from completion of this dissertation, all data will be destroyed.

**Data analysis.** To analyze quantitative data, responses were analyzed in relation to each of the seven research questions. Table 28 lists the data that was used for each question and how it was analyzed. Qualitative data was analyzed using inductive and deductive coding (see next section). Quantitative data was analyzed for significant correlations between variables of interest and also examined for differences between control and treatment groups and between pre- and post-tests.

Table 28

*Intervention Data Analysis*

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Data Source</th>
<th>Statistical Analysis</th>
</tr>
</thead>
</table>
| RQ1 – Do students’ perceptions of future selves predict or relate to academic outcomes? If so, to what degree do they predict or relate to academic outcomes? | • Achievement Data  
• Perceived Competence Scale | • Correlation and potential regression analyses |
| RQ2 – In what ways does mental contrasting aid strategy development? | • Students’ Written Responses | • Inductive coding and coding frame based on Self-Determination Theory and obstacle strategies | • Deductive coding |
| RQ3 – To what extent does writing about possible future selves encourage feelings of competence? | • Perceived Competence Scale | • Paired sample T-test | • Inductive and deductive coding |
| RQ4 – To what extent does change-oriented feedback help or hinder student feelings of future success and competence? | • Perceived Competence Scale | • Correlation and potential regression analysis | • Inductive and deductive coding |
| RQ5 – In what ways, if any, do students receiving teacher feedback develop internally regulated motivation differently than peers who do not receive feedback? | • Self-Regulation Questionnaire • Intrinsic Motivation Inventory • Written Responses • Focus Groups | • T-test with difference scores on both inventories comparing treatment to control | |
| RQ6 – What are student perceptions of the intervention? | • Teacher Focus Group • Student Focus Group | • Inductive and deductive coding. | |
RQ7 – In what ways does an online software system affect student intervention interaction?

- Post-Session Questions
- Teacher Focus Group
- Student Focus Group
- Correlation Analysis
- Inductive and deductive coding

Qualitative data coding. A coding framework was developed before analyzing qualitative data. This framework utilized themes and categories surrounding the Self-Determination Theory needs, possible selves and mental contrasting. Those categories are: (a) competence, (b) autonomy, (c) relatedness, (d) negative feelings of future, (e) positive feelings of future, and (f) strategy creation. In addition, the researcher looked to see if other patterns arose, based upon the following themes: (a) improvement in self-determination and future perceptions, (b) observations of effectiveness of the intervention, and (c) other constructs that emerged. See Appendix Q for a full description of this process.

Measures of Fidelity

O’Donnell (2008) defined fidelity as practice aligning with ideal. Nelson et al. (2012) and Schulte, Easton and Parker (2009) further explained fidelity by saying it is the extent to which an intervention is carried out as planned. Because the researcher’s intervention hinges on engagement by students and responsiveness from teachers, all through an online software system, it is important that fidelity of implementation occurs. To do this, the researcher put in place several fidelity checkpoints, as shown in Table 29.

Table 29

Fidelity Checkpoints
<table>
<thead>
<tr>
<th>Indicator</th>
<th>Source(s)</th>
<th>Frequency</th>
<th>Measures to Prevent Issues</th>
<th>Action When Concerns Arise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students and Teachers:</td>
<td>Post-Session</td>
<td>Teachers and students answered</td>
<td>Software was tested by several experts.</td>
<td>Software developer</td>
</tr>
<tr>
<td>Software Usability and Applicability</td>
<td>Survey</td>
<td>two or three questions after each session, respectively.</td>
<td>altered software code as applicable and able.</td>
<td></td>
</tr>
<tr>
<td>Students:</td>
<td>Intervention</td>
<td>Written responses were stored after every session.</td>
<td>Reminder emails were sent.</td>
<td>Researcher contacted students to remind them to complete each session.</td>
</tr>
<tr>
<td>Four Completed Writing Sessions</td>
<td>Records</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Four random students were selected to receive gift cards after each completed session.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


## Ethical Considerations

Since positive results were found in this study, during the spring semester, the researcher offered the intervention to the control group. These students were given the option to participate in it during the spring or following fall. No data will be collected from this group, and the researcher will take on the responsibility of providing teacher feedback, except in the cases where adults volunteered to continue, having noticed an increased rate of performance in the treatment group. In the event that students select to participate, the connected adult will be contacted.

## Conclusion

This intervention was designed to utilize writing about future selves and mental contrasting to develop obstacle strategies and working perceptions of post-high school success. The use of teacher-generated change-oriented feedback was added to enable the
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creation of internally regulated academic motivation. This pilot implementation served to vet the process, determine success potential, and offer suggestions for changes for a full-scale intervention.
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CHAPTER 6 – FINDINGS AND DISCUSSION

Findings from the data analysis this pilot study are presented here. As described in the previous chapter, examination was performed in line with seven research questions surrounding several themes. The purpose of analysis was to determine effectiveness of the program and its design, offer suggestions for modification, and look for any patterns and trends associated with completion of the intervention. The results of this analysis sufficiently demonstrate the usefulness of Relate to Motivate, the online intervention system utilizing teacher-provided change-oriented feedback on students’ writings about the future. Additionally, they suggest positive and easily implementable alterations for future iterations of the program. The implications of these findings are also discussed below.

Process of Implementation

The sections that follow describe the implementation process of this intervention. Field notes detailed in Chapter 5 were used as the primary source of data analyzed to augment the description of the implementation process.

Teacher rosters and intervention loads. When compiling teacher rosters, it became apparent that many students were shared across teachers. Because students would be paired up intervention with one of their teachers, processes had to be put into place to decide which teacher received which student on their intervention load. While compiling this information on a spreadsheet, students were labeled with every teacher they were associated. After participant solicitation, when it came time to select students, since the Dairy School asked for each teacher to have a reasonable intervention load, these students were then sorted to ensure as close to an even a split as possible. For
example, a few teachers taught core subject areas and had approximately 100 students listed on their rosters resulting in high numbers of intervention volunteers. Other teachers were advanced specialty teachers and had fewer than 20 students, and very few student volunteers.

To do this sorting, several steps were taken. Seventy-one students volunteered to participate via email response. This list was reduced to 43 based on the number who completed the pre-intervention survey. Students were then sorted into teacher groups, based on the order of their response. This left some uneven teacher loads. For example, four teachers had two or fewer student volunteers while five teachers had five or more students. To select students for movement, the random number generator on Random.org was used to distribute students more evenly. Finally RANDOM.ORG was used again to select students for the control group. This sorting process took place during the two weeks students were on winter break.

After break, students who initially volunteered but did not complete all necessary steps were sent a reminder/last call email. An additional nine students completed the paperwork. These students were sorted according to the process outlined above. The decision was made that if any additional survey completions occurred after that sorting, they would go into the control group, however, that did not happen.

Incentives. Each week of the intervention, the software developer ran a status/completion report. Students and teachers who completed all of that week’s task were entered into the drawing for gift cards. Random.org was used to select winners. Each winning student and teacher was emailed, told about their selection, and directed to pick up the gift card at their convenience. In addition, email reminders about completing
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tasks noted that students and teachers who completed each stage of the intervention would be entered in the drawing to receive a gift card.

By the end of the program window, only eight gift cards had been picked up by winners. In the student focus group, students were asked about this. Interestingly, students divulged that the opportunity to receive a gift card was incentive. However, one of the students that said that was one who had never picked up her gift card. She looked embarrassed, but then said it was probably because she did not feel like walking to the researcher’s room to get it. Students suggested that an incentive piece remain part of the program because it got people interested.

Software performance. The web-based software was able to be utilized and rolled out with very few glitches. The site was operational at all times, and the researcher pulled user records on a weekly basis. The only issue that arose with students’ use of the software occurred when they forgot passwords and usernames, which was not unexpected. Students were specifically asked about issues in the post-intervention focus group, and none were reported. Students were able to access the software – and did – from various platforms, such as smartphones and laptops.

The time-out security feature presented a minor issue in terms of teacher use. The system logged teachers out after seven minutes of idle screen time. If teachers stepped away from the software for a longer time period and then returned, when they went to pick back up where they had left off, they received an error message. This error was found in the initial test-run of the program when it occurred after four minutes. The developer was able to extend the security feature to seven minutes. When this was reported by the first teacher user in the first week of the intervention, an email was sent to
all adults explaining the issue and detailing the fix for the problem – returning to the homepage and logging in again.

**Teacher response monitoring.** As mentioned in the methodology, teacher responses would be monitored to ensure feedback was given in a timely manner and efficient manner. Teachers were sent reminders to provide feedback when none was found. While watching participant progression through the program, one student reported to the author that she had a difficult to interpret line of text in part of her teacher’s response. The author discovered that this happened because the teacher did not complete all three response stems in the system. When a stem was left blank, the teacher-prompts language was part of the response output. For example, one response said, 

*College can be very difficult when someone you love passes away and you are not living close to your family to provide support. You might feel obligated to provide more time to support your family, but a priority still must be to complete your assignments in school.*

*(Add detail to the Question Stem) (Add detail to the Relational Story).* After discovering this, the author reminded all teachers to make sure they completed all response stems from the drop-down menu. However, this specific issue continued to be a problem with this specific teacher. After follow-up with the student, she reported she was able to read and understand the responses, despite the computer coding. To prevent this from happening again, the developer will list all stems on one menu, instead of having a drop-down menu teachers need to click through.

**Program Training**

Due to the limited intervention window set forth in conjunction with the Dairy School, training was limited to a virtual presentation and email reminders. This roll-out
seemed to go as expected, though future implementations of the program would benefit for more in-depth training, which would allow some of implementation challenges to be prevented.

**Orientation.** Staff members were emailed the link to the orientation video first, and students were emailed their video a day later. As mentioned in the methods section, the video script can be found in Appendices N and O. To record the video, the web service Screencast-O-Matic was used to match the researcher’s verbal instructions with a visual walk-through of the software. The videos were stored on the researcher’s secure channel, and only participants were able to access them. In the video, a test name was used to log into the system and show participants how to proceed. The teacher training video was just under 10 minutes long while the student version was slightly longer than seven minutes. The videos remained active throughout the duration of the program so that they could be referenced if any questions arose. Screencast-O-Matic keeps records of views, and the teacher video was viewed 35 times, while the student video was viewed 59 times. There was no check to ensure that either teachers or students watched the video, other than their successful login to the system. A means of checking understanding could be included in future iterations.

**Setup.** Students and teachers accessed the program with their email address as a login name. The programmer created a simple cipher password for each user. Logins and passwords were emailed through the software system. The researcher discovered that the hosting service had a cap on the number of emails sent per day, so additional emails had to be hand-generated when the situation was discovered. If future program administrations were housed on school servers, this issue could be circumvented.
Participants were alerted to watch for these system-generated emails. Additional program emails included information on how to email the researcher in case usernames and passwords were lost. One teacher emailed for a password reminder, and a handful of students emailed for reminders. As a whole, training participants and launching the program went as expected and happened in a timely manner. In the future, larger implementations will allow more affordances to make this process even smoother.

**Student and adult feedback.** In addition to focus group feedback, the author received unsolicited feedback throughout the intervention, is detailed below. This feedback was both verbal, with students stopping in to see the author, and written, with students sending emails.

*Reasons for exiting the program.* Several students emailed the author when they needed to drop out of the program. By far, the biggest reason was that they were too busy with other time commitments at the school and did not think they could complete the program. Additional excuses given had to do with things like trouble accessing their email. One example of a student withdrawal is the email that said, *Ms. Duvall, I don't think I will be able to continue doing this survey. I have to [sic] much stuff on my hands and have not had much time to complete surveys. Thank You, [redacted].* Over the course of the intervention and the following month, the author also passed students in the hallway or had students drop into her room to apologize for not completing the intervention. Some stated they did not have time, or had been out of school for a few days and had not been able to get back into the program.

**Adult feedback.** Adult participants of the program also discussed items with the author outside of planned conversations. When technical questions arose, emails were
the preferred method of communication, and were easily resolved via email as well. Teachers seemed very comfortable in working through issues this way. Teachers responded well to email reminders and would connect with the researcher if they needed an additional day or two to complete their feedback. Sample email inquiries from adult participants are featured in Table 30. Based on emails from teachers, the author will recommend that additional training time be given to teachers in the next iteration of the intervention in order to counteract some of the questions that arose during the pilot study.

Table 30

<table>
<thead>
<tr>
<th>Topic</th>
<th>Email Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responding to an email with notes/updates</td>
<td>...somehow I cannot find the link to review the prompts, can you send it to me? Thanks.</td>
</tr>
<tr>
<td>After asking for a few more days to complete feedback</td>
<td>Thanks for the extension. I finished the first round of responses...and it was fun. I need to swing by to pick up my gift card soon! 😊</td>
</tr>
<tr>
<td>After receiving a reminder email about the approaching deadline for responses</td>
<td>I sent you a text to apologize for not responding to my students, and then I saw this email and realized I have until Wednesday (whew)! Sunday was in my head because that was the students’ deadline. However, I am going through all of my emails and found my username and password, but not the website. Can you please send a link to the login screen for R2M?</td>
</tr>
</tbody>
</table>
Teachers were effusive in their verbal feedback about how the program was going. For example, near the end of the intervention, one teacher walked into the building with the researcher at the start of the school day. He suggested the program be implemented school-wide, because it would be good for all students. He likened the program to silent mentorship, where teachers and students could interact in a proactive relationship about students’ futures, something that classroom time does not always allow for.

**Suggestions for future implementation.** There was some debate in the focus groups about which grade level would best benefit from the intervention, with teachers and students all naming reasons why all the grades would benefit. Yet students did have a suggestion for improving the mental contrasting aspect of the intervention. In the focus group, students asked that in the next iteration of the intervention prompts be more closely aligned with them as individuals, such as the second of the four prompts was. The researcher surmises this was because the more specific of the four prompts appeared to give them the most rewarding feedback.

In the teacher group, teachers had different perspectives on when the program could be used, and suggested that it could be effectively targeted toward any age level. For example, one teacher said that in the future, the intervention’s question about post-secondary items should be aimed at older students. She suggested that for younger students, ones just starting in high school, the questions should be focused on their plans for high school, such as “What are you going to do as an upperclassman? What are the
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things that need to be accomplished as an upperclassman to continue to be successful into post-secondary, you know, going into college?”

Findings

The National Center for Education Statistics, in its study on interventions aimed to prepare disadvantaged students for postsecondary success said “…programs represent a significant beacon of hope for many young people” (Gándara, 2001). Yet, in the same report, the NCES addressed the weak evaluative systems in place for these programs, and called for more effective appraisals of these programs to see what results they have on these students. The following sections detail the outcomes of this pilot implementation, as broken down by research question.

Research Question 1: Do students’ perceptions of future selves relate to or predict academic outcomes? If so, to what degree?

The intervention fell over the end of the second marking period and the beginning of the third. In order to answer this research question, the researcher analyzed students’ second marking period cumulative GPAs and their third marking period GPAs, as calculated by the Dairy School’s performance management system, using them as a source of comparison. The purpose of this comparison was to look for any changes in academic outcomes between the beginning and the end of the intervention. Descriptive analysis was done first. The analysis looked at all students who began the intervention, only the students who completed the intervention, a breakdown of students in the control group who completed the intervention and students in the treatment group who completed the intervention, and the students who did not complete the intervention (Table 31). Those who completed the intervention had slightly higher mean marking period grades
(89.1, 88.4) than the mean for all participants (87.08, 87.25). Also, while the treatment group’s means (88.85, 88.65) were less than the four-person control group’s (90.69, 90.01), it should be noted that the range of grades for the treatment group was higher than all the other sub-groupings.

For the first group, students who began the intervention, their time in the program ranged from completing only the introductory work to completing up to three responses. These students were included so that a larger N, 59, could be used as a means gauging correlation between initial grades and perceived competence. Likewise, students who did not complete the intervention were included to see if any effects could be found for limited participation. While the treatment group was asked specific questions about their futures, goals, obstacles, and what strategies they could use to achieve these ideal futures, the treatment group was only asked to describe certain aspects of their future. The treatment group consisted of 25 students who completed the intervention, while there were four students in the control group who completed all aspects. The grade range for students who completed the program was slightly higher in the treatment group than in the control group.

Table 31

_Descriptive Statistics for Second and Third Marking Period GPA_

<table>
<thead>
<tr>
<th></th>
<th>Second Marking Period</th>
<th></th>
<th>Third Marking Period</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M</td>
<td>Range</td>
<td>SD</td>
</tr>
<tr>
<td>All Participants</td>
<td>52</td>
<td>87.08</td>
<td>60.33-</td>
<td>8.45</td>
</tr>
<tr>
<td></td>
<td>100.83</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
To begin answering this research question, the researcher examined the relationship between second marking period grades and the pre-intervention Perceived Competence Scale scores. First, the researcher translated the students’ grades into a scale from 1 to 6: 1 (0-74), 2 (75-79), 3 (80-84), 4 (85-89), 5 (90-94), 6 (95-100). Next, the researcher examined the relationship between the students’ second marking period grades and their answers on the pre-intervention Perceived Competence Scale. To analyze the correlation, the researcher used SPSS to determine significance with Spearman’s Rho. Spearman’s Rho was utilized because of its ability to analyze correlation when Likert scales are part of the equation, as well as the small sample size which might impact the use of a Pearson’s correlation.
**All participants.** With an *n* of 52, the mean score on the Perceived Competence Inventory was 5.75 (see Table 32). As shown in Table 33, there was significance at the .10 level for Spearman. This means that as students’ perceived competence increases, their grades are likely to increase as well.

Table 32  
*Descriptive Statistics for 2nd Marking Period Grade and Perceived Competence Inventory Score*

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Participants 2nd Marking Period Grade</td>
<td>52</td>
<td>4.00</td>
<td>1.57</td>
</tr>
<tr>
<td>Perceived Competence Inventory Score</td>
<td>52</td>
<td>5.75</td>
<td>1.07</td>
</tr>
<tr>
<td>All Completers 2nd Marking Period Grade</td>
<td>29</td>
<td>4.28</td>
<td>1.44</td>
</tr>
<tr>
<td>Perceived Competence Inventory score</td>
<td>29</td>
<td>5.65</td>
<td>1.01</td>
</tr>
</tbody>
</table>

Table 33  
*Correlations for 2nd Marking Period Grade and Perceived Competence Inventory Score*

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>Correlation</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Participants 2nd Marking Period Grade *</td>
<td>52</td>
<td>.24</td>
<td>.08*</td>
</tr>
<tr>
<td>Perceived Competence Inventory Score</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Completers 2nd MP Grade * Perceived Competence Inventory score</td>
<td>29</td>
<td>.49</td>
<td>.007**</td>
</tr>
</tbody>
</table>

* Significant at the .10 level
Participates who completed the intervention (treatment and control). Next, the researcher examined only the population of students who completed the intervention. For these 29 students, the mean score on the Perceived Competence Inventory was 5.65 (see Table 32). Because the second marking period grades were finalized during the intervention, it is possible that the intervention might have had some effect on these grades as well. Table 33 shows a statistically significant positive correlation at the .01 level between the second marking period grades and the perceived competence in future abilities for students who completed the intervention ($n = 29; r_s = .49, p = .007$).

Quantitative analysis shows that perceived competence is significantly linked to achievement. This is helpful as a first step of analysis because it lends validity to the idea that increasing student competence in their future abilities can help students achieve more.

Independent samples T-test. Next, the researcher calculated a difference score for the Perceived Competence Inventory (post-test score minus pre-test score) and analyzed this score to compare the control to treatment groups for those students who completed the intervention. The control group had a slightly lower mean difference score of -.19 ($N=4, SD=.97$) when compared to the treatment group’s mean difference score of -.02 ($N=25, SD=.6728$). This presents the question of what contributed to this – did the intervention prevent decay? It is worth noting, however, that the control group also had a higher deviation from the mean (.48 compared to .13 for the treatment group), meaning it was a less homogenous group. The T-test found that there was no significant difference
between the control group and the treatment group in their Perceived Competence Inventory difference scores \[ t(1, 27) = -0.44, p = 0.67 \]. These results can be seen in Table 34 and Table 35. Because there was no significant difference between the two groups, the researcher was unable to detect if teacher feedback affected students’ perception of competence. Responding to the prompts and thinking about the issues may have been sufficient for developing students’ feelings of competence. However, with a small control group of only four students, it is difficult to tell how significant this finding is.

Table 34

<table>
<thead>
<tr>
<th>Perceived Competence Inventory difference score</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Group</td>
<td>4</td>
<td>-0.19</td>
<td>0.97</td>
<td>0.48</td>
</tr>
<tr>
<td>Treatment Group</td>
<td>25</td>
<td>-0.02</td>
<td>0.67</td>
<td>0.13</td>
</tr>
</tbody>
</table>

Table 35

<table>
<thead>
<tr>
<th></th>
<th>F</th>
<th>Sig.</th>
<th>t</th>
<th>df</th>
<th>P (2-tailed)</th>
<th>Mean</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal variances</td>
<td>1.9</td>
<td>.18</td>
<td>-.437</td>
<td>27</td>
<td>.67</td>
<td>-.17</td>
<td>.38</td>
</tr>
<tr>
<td>assumed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Paired samples t-tests of achievement data.** To further examine the relationship between perceived competence and achievement, two additional analyses were...
employed. Neither of these proved significance, most likely due to the small sample size. The details of these analyses are listed below.

First, the researcher used a paired samples tests to determine whether students’ grades improved in the class associated with the teacher who partnered with them in the intervention. Because some adult participants were not classroom teachers, those teachers and students could not be included in these tests. This limited the sample to only 20 participants who completed the intervention, all of whom were from the treatment group since the control group did not interact with a teacher.

Correlation was found between the second and third marking period grades for this group ($r = .41, p < .08$), however, when the paired samples T-test was run, there was no significance found between students’ second and third marking period grades $t(20) = .15, p = .17$. These results are shown in Table 36

Table 36

| Paired Samples T-Test for Teacher-Connected Grades |
|-----------------|---------|-------|-----|
| Mean            | Paired Dif | T    | Df  | p    |
| Grades by Teacher | .35     | .15  | 19  | .17  |

The Dairy School also keeps records of student effort in each content class. These grades are subjective, based on a rubric that gauges students’ participation in class and homework completion. An A-F letter scale is used. To see if the intervention had an effect on perceived effort, the next test looked to see if students perceived effort grades went up in the classes associated with their adult feedback provider. Table 37 lists the
descriptive statistics for this analysis, which shows that, on average, student effort grades appeared to have dropped between marking periods, however, because this was not linked to significance, the researcher is unable to tell if this is a valid drop.

Table 37

*Perceived Effort Grade Descriptives*

<table>
<thead>
<tr>
<th></th>
<th>Second Marking Period</th>
<th>Third Marking Period</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( N )</td>
<td>( M )</td>
</tr>
<tr>
<td>All Participants</td>
<td>52</td>
<td>3.48</td>
</tr>
<tr>
<td>Completed Intervention</td>
<td>29</td>
<td>3.76</td>
</tr>
<tr>
<td>Treatment Group</td>
<td>25</td>
<td>3.92</td>
</tr>
<tr>
<td>Control Group</td>
<td>4</td>
<td>2.75</td>
</tr>
<tr>
<td>Did Not Complete</td>
<td>23</td>
<td>3.13</td>
</tr>
</tbody>
</table>

Despite the drop shown in the descriptive statistics, no significant relationship was found between students’ effort in second marking period and their effort in third marking period, as shown in Table 38. There are several possible explanations for this that could be explored further in future investigations. First, the window of the intervention might have been too small. Effort grades are given weekly, and each
marking period has at least 10 weeks. With the intervention spanning only two weeks within each marking period, the time period might have been too small to note a difference. Secondly, since effort is graded subjectively, teachers might have unconsciously subjected students in the intervention to higher expectations in terms of effort due to their connection to an intervention in which students are asked to think about strategies for success. Finally, the intervention might have impacted students’ work in class because they had changed their goals based on the intervention. Overall, though, it must be factored in that the descriptive statistics show that the mean of all student effort grades went down from second to third marking period, which leads one to wonder if this is a mid-year “slump” for students. As mentioned earlier, a larger sample size would aid in future tests of perceived competence’s effect on achievement.

Table 38

Lack of Significance Between Student Effort Grades and Intervention

<table>
<thead>
<tr>
<th>Paired Dif</th>
<th>T</th>
<th>Df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>.38</td>
<td>.86</td>
<td>51</td>
</tr>
</tbody>
</table>

Yet, despite the inconclusive results of the latter two tests, the results from the first tests in this section indicate Hypothesis 1, which proposed positive perceptions of future selves are positively correlated with better academic outcomes was correct. It is likely that the small sample size impacted significance, and these tests should be rerun with a larger sample size in the next iteration.
Research Question 2: In what ways does mental contrasting aid strategy
development?

Qualitative data were used to answer this question from several sources. These data were gleaned from students’ written responses to the four intervention prompts, the student focus group, and the adult focus group. In this section, analysis of students’ strategy descriptions and development will be detailed. Specifically, this section will look at the frequency of unrealistic strategy perceptions in student writing and what types of strategies were detailed when students were able to. The author will then discuss a specific student’s outcomes, which will lend to the conclusion for this research question.

Coding. A full explanation of coding appears in Appendix Q. This five step process employed both deductive and inductive coding. Four initial umbrella codes were used, and those were (a) obstacles, (b) strategies, (c) positive futures, and (d) negative futures. From this, several descriptive codes were created, including, but not limited to action goals, non-action goals, family, and types of motivation. For the control group, two additional codes were created, general and specific. This coding and reflection process went through several iterations.

Unrealistic obstacles. Both the control group and the treatment group students wrote about unrealistic perceptions of the future. Several participants in the treatment groups also had unrealistic ideas of the obstacles they would face, and of strategies that would be helpful overcoming these obstacles. For example, nine students reported that the only things that could stop them from achieving their dreams and goals were tragedies, such as death or natural disasters. For example, one participant responded, 

One thing that would definitely stop me from becoming a pediatrician would be if I died.
In all honesty this would be the main thing that would prevent me from doing what I want unless I have been influenced to look more in depth into another career. I will make sure to stay out of troubles ways and stay on the safe path. Even when students did not list such an extremely unrealistic obstacle, many cases showed that students were not aware of the typical roadblocks for students from backgrounds of poverty, such as lack of financial resources, limited connections to people in the chosen career field, and limited access to resources.

**Specificity of strategies.** When coding the written responses, the researcher sorted strategies in several ways, first by noting if they, and other portions of the response, were unrealistic, as addressed in the section above. The complete coding methodology can be found in Appendix Q. Then, on the second, more detailed sweep, the researcher coded mentions of strategies as specific strategies, non-action strategies, and not appropriate strategies. This was an iterative process, and the researcher swept through each student’s response at least four times. During the final pass, the researcher also divided specific strategies into two categories, specific and relatively specific. Table 39 shows an example of the author’s interpretation of each, as well as the number of students who fell into each category. From this, it can be seen that only 20% of students responded with detailed and specific strategies for the first prompt, which specifically asked students to detail ways to overcome an obstacle. More than half listed non-actionable strategies or not appropriate strategies.
**Prompt:** What is one obstacle that might prevent you from doing well at college, in the military, or at your first job? What are some ways you could overcome that obstacle?

<table>
<thead>
<tr>
<th>N</th>
<th>Type of Strategy</th>
<th>Sample Response (Description of Obstacle andStrategy(ies) for Overcoming Obstacle)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Specific Strategy</td>
<td>One major obstacle that may prevent me from doing well in college in the lack of money my family has... I think about the financial situation of my family a lot. Today they continue to struggle to pay bills, and keep a full refrigerator of food and it saddens me. This also worries me, because I will be going to college in the fall of 2016... If I can't afford to go to college, well then there is no way for me to do well if I am not attending. With the thought of this obstacle I have also sought ways of overcoming it. I have begun to save up money so I have a little bit to put towards college. I have applied for scholarships outside of the college I am going to... I plan on doing a paid work-study program at my college to help pay my way through. All these things being very stressing and time consuming but necessary in order for me to achieve my goal and graduate from college.</td>
</tr>
<tr>
<td>8</td>
<td>Relatively Specific Strategy</td>
<td>I think currently since [Dairy School] gives me so much I might not be able to do some things on my own. Examples would be filling out paperwork, organizing my own</td>
</tr>
</tbody>
</table>
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transportation needs, not needing to pay for lost items only if they are damaged. I think that by learning more on how to handle money properly and take better care of my own belongings could help prepare me. I also believe that by listening to the struggles of other people out in the world that I could benefit by listening to them.

7  Non-Action Strategy  I think one of the obstacles are not being able to study enough or as much as I need to in college. Some ways I could overcome that obstacle is by just completely focusing on school and the only other important things [sic] that I need to worry about.

9  Not Appropriate Strategy  I feel that my family would hold me back from doing well because I want to be able to be there for my family so much more than anything. I feel that if I could realize that I need to focus on myself, I could overcome this.

In the focus group sessions, one teacher pointed out that his student had come up with an unrealistic strategy for helping a family member in need, while another noted that she saw some really good responses crafted. Despite the adult focus group’s belief that student strategies did not drastically improve based on their feedback over the course of the intervention, the student group showed this was not the correct perception. In the student focus group, several students commented that they had not realized their strategies were ineffective and that there were other strategy options available to them.
until after their teachers pointed them out. Students also noted that the mental contrasting prompts made them really think about the questions posed, their futures, and how they will respond to future situations, in order to come up with plans for their future.

**Cassie’s case.** Cassie’s activity within the intervention is an example of this. She is a 9th grader. She identifies as Black, maintains an A average in all classes except for math, in which she has a B average, and has consistently received marks for excellent conduct. She is the daughter of a single mother, and entered the Dairy School in middle school. Mrs. Harker provided feedback to Cassie and several other ninth grade students. She is an ethnic minority in her late thirties, and is relatively new to the teaching profession, having served at Dairy for only a few years. She teaches all tracks of students, from honors to intensive support.

**Cassie’s organizational strategy development.** Pre- and post-intervention measures discovered that while her academic motivation decreased slightly – as expected when students progress into and through high school (Otis et al., 2005) – her awareness of strategies for overcoming obstacles increased significantly and her confidence in her post-secondary abilities also increased. Her early response to an obstacle that could prevent success was limited, and the strategy she listed was having a calendar. Her teacher’s change-oriented feedback included keeping a goal journal, where she could map out activities and due dates. She suggested Cassie identify skills that she can use to stay organized. In one other response, Cassie noted that the actual physical processes involved in her dream career could stop her from achieving her goal. In the response, her teacher acknowledged that she had trouble in college when something was hard, and
suggested that Cassie always allow herself to step back and refocus to see how to get
back on track.

_**Cassie’s family obstacle strategy development.**_ For the prompt that had students
respond to a specific scenario in which a family member needs them to come home when
a boss will not allow the time off, Cassie said she would try to get time to help. The
teacher’s response let her know that it is okay to say no sometimes when you have a job
you care about. She suggested offering to visit on her next day off, and told Cassie it was
not selfish to put herself first, and that she (the teacher) learned that the hard way. In a
post-intervention focus group, Cassie stated her teacher helped her realize there were life
situations in which she might need support. She mentioned that before reading her
teacher’s response about leaving a new job to help a family member, she never realized
she had options in such difficult situations, and that it was okay to put herself first: “I
hadn’t thought about it that way, I thought I had to help my family.” Did other students
have similar development? When Cassie said this, other students talked about their
responses to teacher suggestions, and certain situations that might arise. One student
noted that after saying she would be stressed out in college, her teacher followed up by
prompting her to think more about what plans she could make to overcome that stress. In
the focus group, students shared with each other their reactions to certain prompts,
expressing concern or fear for the obstacles that would challenge them. They then talked
about changes they would make, as well, as acknowledging that the program made them
think about things as they hadn’t before.

Comparisons to the control group imply that the strategy of mental contrasting
does incite students to think about obstacle strategies. In the control group, which was
not asked to utilize mental contrasting, only one student, and only for one prompt, listed a
generic obstacle strategy, which read, *If it works out then great but if not then I’ll just go
straight to college with my original plan.*

When merging information from student writing, the student focus group, and the
adult focus group, it appears that mental contrasting is an effective way to help students
think about obstacle strategies. This method is especially helpful when paired with
teacher feedback because it helps students create appropriate and workable strategies. By
altering prompts to be more specific, and adding an additional survey administration
several weeks after the close of the intervention, student strategy improvement might be
even more noticeable. Despite this need for additional study, it appears that qualitative
data, from both the focus group and comparisons to the control group, might support
Hypothesis 2, that mental contrasting aids strategy creation, is true when aided by
teacher-provided feedback. A larger sample size should help lend conclusive light to this
finding.

**Research Question 3: Does writing about possible future selves encourage feelings of
competence? If so, to what extent?**

Next the researcher looked to see what, if any, effects the intervention had on
perceived competence. The following pieces will discuss the interventions impact
through a discussion of both quantitative and qualitative data. Specific student responses,
both in surveys and in the program and focus groups, as well as their teachers’ thoughts,
will be noted. Changes in competence will be analyzed.

**Perceived competence scores.** Quantitative analysis was analyzed first by
looking at descriptive statistics (Table 40). The means of the scores of all participant
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who completed the intervention decreased slightly, although not significantly \( p < .74 \).

On the pre-survey, the perceived competence scale had a mean of 5.64, with a standard deviation of 1.01. On the post instrumentation, it had a mean of 5.60, which was slightly lower, but with a higher standard deviation of 1.10.

Table 40

*Perceived Competence Pre and Post Descriptive Statistics*

<table>
<thead>
<tr>
<th></th>
<th>Pre Test</th>
<th>Post Test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( N )</td>
<td>( M )</td>
</tr>
<tr>
<td>All Students Who Completed Intervention</td>
<td>29</td>
<td>5.65</td>
</tr>
<tr>
<td>Treatment Group</td>
<td>25</td>
<td>5.6</td>
</tr>
<tr>
<td>Control Group</td>
<td>4</td>
<td>5.94</td>
</tr>
</tbody>
</table>

**Intervention effects on perceived competence.** To test this, a paired sample t-Test was run comparing the pre-intervention perceived competence score to the post-intervention perceived competence score. In addition, an independent samples t-Test was run to compare the post perceived competence scores of the control group to the post perceived competence scores of the treatment group. No significant improvement was shown in feelings of competence after the intervention as compared to student feelings before the intervention, and there was no significance between the scores of the control group as compared to the treatment group. Because the intervention was only four
 weeks, it is possible that the researcher was not able to notice any difference because of
the short window between pre- and post- testing and that is why this test failed to meet
significance. Table 41 shows the results of the t-Test.

Table 41

*Independent Samples t-Test Post Perceived Competence Scale*

<table>
<thead>
<tr>
<th>Paired Dif</th>
<th>T</th>
<th>Df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Competence Scale Pre to Post Test</td>
<td>.04</td>
<td>.33</td>
<td>28</td>
</tr>
</tbody>
</table>

These findings could also indicate that students became more realistic in terms of
their perceived competence in dealing with issues they might face in the future. For
example, one ninth grade student answered the first prompt by writing *I probably
procrastinated to get in this sticky situation. That is literally what I would do. To finish
the year I should probably actually get the work done.* The teacher response to that
prompt said, *College can be very difficult when we procrastinate. We think that high
school really prepares us for the rigor of college, but in actuality it is only a glimpse of
what college is like. When something like this happens, it's helpful to re-focus on the end
goal and prioritize what needs to be accomplished to finish that goal. I have had times
when procrastinating really hurt me. I thought going back to college would be easy as an
adult, but with all my other responsibilities it was much harder. I wish that I would
finished when I entered college right after high school and not let myself be so distracted
by the social aspect of college.* When students had unrealistic ideas of how easy it might
be to change a bad habit, or something like that, teacher responses that were more realistic might have altered students’ perceptions like the teacher’s response above. The focus group questions did not allow for the above hypothesis to be tested. Additionally, the researcher was not able to use the student focus group as a means of comparison between treatment group and control group because only one member of the control group participated in the focus group.

**Positive changes in competence.**

Individual case analyses demonstrate positive improvements. Though the intervention was short and only a few of students’ situations were discussed in focus groups, these discussions shed light on the program’s ability to drive positive changes in competence. One example of this is Kaliq’s case.

**Kaliq’s case.** Kaliq is a 17-year-old senior boy with plans to find employment in the medical field after college. He began at Dairy at the beginning of high school. He is enrolled in several AP or honors courses, though the course he shares with the teacher who provided his feedback is not. His teacher, Mr. Jay is a White content area teacher in his 40’s who has been at Dairy School for many years. He teaches general education students. Mr. Jay spoke several times about enjoying the online component of the program because it allowed him to take time to read, think, reflect, write, and then again reflect before submitting his response. Of all the teachers in the intervention, Mr. Jay’s were the most detailed and specific. He guessed he spent 20-30 minutes on each student response. He referred to the program as beneficial and important for both students and teachers.
Mr. Jay, noted in the post-intervention focus group that Kaliq had very unrealistic perceptions of how to overcome obstacles. For example, Kaliq stated if his family needed his help right after he started his dream job, he would hire people to help them (Since I do not like to pack and move and considering the spot I have been put in, I would call for a moving truck to help my friend/family member.). He stated the only thing that could keep him from his chosen profession would be death, and one solution he had for overcoming obstacles was asking God for guidance (If there was for some reason that I have a breakdown and feel done, these are the times I pray and call out to God for guidance and ask him what I should do and see what he has planned for me.). In his responses, Mr. Jay provided lots of advice and feedback, such as letting him know about free support services in college, how to get study groups and tutors, and connecting with professors. Mr. Jay gave detailed stories about his experiences in college and with family, noting the schedule he would set for himself, and how he managed to complete work-study while being enrolled full-time. In the very last prompt, Mr. Jay encouraged Kaliq and noted his confidence in him. In Kaliq’s post-intervention survey, he had a two-point increase in his feeling he had planned for his future. He also had a one-point decrease in thinking that roadblocks were a sign of failure. Conversely, Kaliq’s belief that he had adequate skills in place for his future decreased by one point, while his strategy awareness remained the same. It might be possible that this intervention moves students from non-actionable fantasy realization to actionable realizations.

Mr. Jay, in the focus group noted that he wanted to make sure his students knew there was nothing wrong with taking advantage of college services, even if they thought they were doing well. He told the group that in the middle of the intervention, Kaliq,
whom he did not think he had a close relationship with – he described it as “cordial” and “a decent working relationship… but I wouldn’t say we were close” – emailed him, thanking him for his time and insight.

Like Kaliq, Monica’s feelings that she had planned for the future also increased (by one point). She also reported an increase in positive feelings about her future. Additionally, her surveys indicated she felt more confident in her future success and in her ability to learn the material she needed for her career. Monica and her teacher participated in the focus groups. Her teacher often alluded to Monica’s limited awareness of strategies for the future. She spoke of her concern for her student’s college attrition. She noted that she was aware of the intervention’s ability to meet the objective of increasing self-regulation, and was glad that her particular student was able to go through this, and wanted the program to continue in the future as a mentorship activity, so that other students could get “valuable feedback about how [they] have changed. How [they’ve] progressed.” In her focus group, Monica was shy and soft-spoken, but rated the program as an 8, and suggested that in the future the program have questions specifically tailored for each student.

One example of a student with negative outcomes who did not complete the program also demonstrates the program’s ability to affect competence. Mrs. Harker, who interacted with ninth grade students detailed her interaction with one girl who left the program halfway through because she was involved in behavioral issues. Mrs. Harker noted that other teachers had concerns about the student because when she started the year it was clear she was struggling. She noted that this student, even though they were not particularly close, would come to her when she needed help with something. Mrs.
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Harker said that she felt the program helped make the girl connect to her, and implied that it was beneficial to the student. For this reason, it was startling to Mrs. Harker when the girl stopped responding to prompts. “I find it interesting that the around time she started to have issues, she stopped doing her responses… she withdrew from me.” If students pull out from the program when their behavior slides in the negative direction, does that speak to a realization of its ability to point students toward positive change?

By looking at both qualitative and quantitative data, a larger scale study is recommended to find more conclusive answers as to whether Hypothesis 2, that writing about future selves improves feelings of competence, is correct. While quantitative data does not provide conclusive evidence to support this hypothesis, qualitative data indicates that the hypothesis might be correct.

Research Question 4: To what extent does change-oriented feedback help or hinder student feelings of success and competence.

To begin analyzing this the treatment group’s scores on the perceived competence scale were split from the control group’s and compared. As also happened when all groups were kept together, the means decreased, but this time with a larger decrease for the control group (see Table 42). This could possibly be due to the small sample size – four out of five in the treatment group completed the intervention. Probably due to this same limited sample size issue, significance was not found when an independent samples test was run (Table 43). However, when looking at the descriptive statistics, it is can be seen that mean perceived competence for the treatment group did not decrease while it did for the control group, which might indicate a possible trend, which should be studied in future iterations. This is shown in Table 42.
Table 42

*Descriptive Statistics for Perceived Competence Pre and Post Test Scores*

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th></th>
<th>Treatment</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Pre-Intervention</td>
<td>5.94</td>
<td>.24</td>
<td>5.6</td>
<td>1.08</td>
</tr>
<tr>
<td>Perceived Competence</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-Intervention</td>
<td>5.75</td>
<td>1.19</td>
<td>5.6</td>
<td>1.12</td>
</tr>
<tr>
<td>Perceived Competence</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 43

*Perceived Competence Independent Samples t-Test*

<table>
<thead>
<tr>
<th></th>
<th>Mean Diff.</th>
<th>SD</th>
<th>T</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Test</td>
<td>.34</td>
<td>.55</td>
<td>.61</td>
<td>27</td>
<td>.55</td>
</tr>
<tr>
<td>Post-Test</td>
<td>.17</td>
<td>.61</td>
<td>.28</td>
<td>27</td>
<td>.78</td>
</tr>
</tbody>
</table>

*Katie’s case.* Katie’s case is a demonstration of changes in perceived competence as a result of the program. Like specific cases mentioned earlier, such as Cassie and Kaliq, Katie reported that she had changed as a results of the program, in her case, the change dealt with her post-secondary plans and ability to successfully transition and earn her degree.

A week and a half after the intervention started, Katie stopped in to see the author. Katie is an 18-year-old White senior from an urban home setting. She enrolled in the
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Dairy School at the beginning of eighth grade. During her senior year, her grades averaged in the mid-C range, though her cumulative GPA was able to stay at the B level. She came to see the researcher to ask her teacher knew who she was when she responded to her prompts. Katie was informed they did. She said that she was unhappy because in the program she had been matched up with a counselor who she felt always told her she was not “cut out” for the career path she had planned. When asked, Katie told the researcher that she was not stressed about her teacher’s R2M response, that the counselor had not said anything about her not being cut out for her career in the response, and that she was going to continue in the program – she simply wanted to know if the counselor knew she was writing to and matched with her.

Interestingly, during the focus group interview, Katie stated that that she changed her post-secondary plans because of the intervention. Originally she had intended to go right to a four-year school (which her counselor did not support), but after going through the program she decided she would first do a transitional year at a community college. She said she did this because “community college gives me that chance to basically get used to the college environment, get ready for a four-year degree – a four-year program at a college.” R2M helped Katie realize that she would be more comfortable doing this than jumping right into a program at a four-year private school, and in turn helped her feel excited and competent in her abilities to complete her degree.

When looking at Katie’s interaction with the program, there are many things of note. During Katie’s first R2M prompt response, she stated that procrastination would be her biggest obstacle, and listed a non-specific strategy for overcoming it: practicing good time management. In the response to Katie, her counselor wrote that when she was in
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college she used to break large assignments into smaller pieces and give herself deadlines for each piece, or what she called “artificial deadlines.” Interestingly, Katie did not complete all stages of the intervention – leaving one prompt unanswered. She did not address this during the focus group, but it is worth noting that her teacher did not respond to all of Katie’s prompts. It is possible that Katie dropped off from the program after not receiving feedback.

Despite only completing three of the four prompts, and her initial hesitation over placement with her counselor, Katie’s impression of the program was positive, and her only request was that the software include more colors on the interface. Her post-test results show an increase in her belief that she can manage college and learn while there. She noted she had more positive feelings about her future and less negative feelings. She also planned more for her future and felt she would be better able to overcome obstacles, which indicates she may have gained skills and cognitive strategies for overcoming obstacles, in line RQ3 as well.

Research Question 5: In what ways, if any, do students receiving teacher feedback develop internally regulated motivation differently than peers who do not receive feedback?

This section analyzes both qualitative and quantitative data. There was a significant correlation between completing this intervention and internally regulated motivation. Additional qualitative data talks about a specific incident where teacher feedback created change due to the program.

By looking at the self-regulation questionnaire and scoring it using the SDT inventory’s relative autonomy index for individual subscores, the author was able to
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analyze this data. This means that each response is weighted by its position on the Self-Determination Theory’s continuum. The weights range from -2 (external) to +2 (intrinsic). Thus, a student who has more autonomous feelings would have a more positive score.

The self-regulation score means for all groups rose over the course of the intervention with the exception of students who did not complete it. The pre-intervention mean was 5.41. The post mean was 2.58. These descriptive statistics imply that students who did not complete the intervention had a drop in autonomous regulation. Descriptive statistics can be seen in Table 44.

Table 44

Self-Regulation (RAI) Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>Pre-Test RAI Scores</th>
<th>Post-Test RAI Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M</td>
</tr>
<tr>
<td>All Participants</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>52</td>
<td>5.23</td>
</tr>
<tr>
<td>Completed Intervention (Treatment and Control)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>29</td>
<td>5.1</td>
</tr>
<tr>
<td>Treatment Group</td>
<td>25</td>
<td>5.12</td>
</tr>
<tr>
<td>Control Group</td>
<td>4</td>
<td>4.91</td>
</tr>
<tr>
<td>Did Not Complete Intervention</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>23</td>
<td>5.41</td>
</tr>
</tbody>
</table>
The post-intervention scores on this scale for students who completed the intervention had a mean of 5.57, with a standard deviation of 2.51. A Pearson’s correlation test showed these scores had a positive correlation of .768, which was significant at the .01 level, indicating that these scores increased over the course of the intervention. To add validity to this finding, a Spearman’s rho was run as it specifically factors in Likert-style question intricacies. This is shown in Table 45. To look further into this, the researcher broke down the groups into treatment and control, and found that while both had a statistically significant correlation, the correlation was stronger for the treatment group \((p < 0.01)\) than the control group \((p < 0.05)\) (Table 45). While it does not necessarily prove that the intervention caused this increase, that is one possible interpretation, as qualitative feedback indicates similar results.

Table 45

*Correlation Between Internally Regulated/Autonomous Motivation and This Program.*

<table>
<thead>
<tr>
<th>Test</th>
<th>Correlation Coefficient</th>
<th>( P )</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All Students Who Completed Intervention</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson</td>
<td>.77**</td>
<td>.00</td>
</tr>
<tr>
<td>Spearman</td>
<td>.78**</td>
<td>.00</td>
</tr>
<tr>
<td><strong>Treatment Group</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson</td>
<td>.76**</td>
<td>.00</td>
</tr>
<tr>
<td>Spearman</td>
<td>.73**</td>
<td>.00</td>
</tr>
<tr>
<td><strong>Control Group</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson</td>
<td>.98*</td>
<td>.00</td>
</tr>
</tbody>
</table>

154
To determine the significance of this correlation, an independent samples t-Test was used for the Self-Regulation Questionnaire as grouped by control and treatment categories. The descriptive statistics used for this test are shown in Table 46

Table 46

_Self-Regulation Questionnaire (RAI) Mean Scores_

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Test</td>
<td>Treatment</td>
<td>25</td>
<td>5.12</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>4</td>
<td>4.91</td>
</tr>
<tr>
<td>Post-Test</td>
<td>Treatment</td>
<td>25</td>
<td>5.51</td>
</tr>
</tbody>
</table>
As shown in Table 47, no statistical significance was detected between the means of the pre-test scores ($p = .82$), or the post-test scores ($p = .75$), for control and treatment groups on this scale, which measured autonomous motivation. Additionally, no statistical significance was found between the differences between pre- and post-tests of the two groups ($p = .4$) (Table 48).

Table 47

*Independent Sample t-Test Self-Regulation Questionnaire (RAI) Pre and Post*

<table>
<thead>
<tr>
<th>Paired Dif</th>
<th>T</th>
<th>Df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Regulation Questionnaire Pre-Test</td>
<td>-.21</td>
<td>.23</td>
<td>27</td>
</tr>
<tr>
<td>Self-Regulation Questionnaire Post-Test</td>
<td>.43</td>
<td>.35</td>
<td>27</td>
</tr>
</tbody>
</table>

Table 48

*Independent Sample t-Test Self Regulation Questionnaire Between Pre and Post*

<table>
<thead>
<tr>
<th>Paired Dif</th>
<th>T</th>
<th>Df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difference Over Time</td>
<td>.73</td>
<td>.73</td>
<td>27</td>
</tr>
</tbody>
</table>
Next, the researcher looked to analyze the scores of the Intrinsic Motivation Inventory, which was only a post-test. This scale measures several components of intrinsic motivation and self-regulation related to the intervention, such as interest/enjoyment, finding value in the activity, and perceived choice. Table 49 shows the full list of descriptive statistics for these three constructs. The means of the treatment group were higher than the control group for all three constructs, though most notable for interest (T = 5.01; C = 4.47) and value (T = 4.83, C = 4.16), which indicates students in the treatment group might find the interaction with teachers and mental contrasting portions of the intervention more engaging and worthwhile than their control peers did.

Table 49

*Descriptive Statistics Intrinsic Motivation Inventory (IMI)*

<table>
<thead>
<tr>
<th></th>
<th>Post-Test IMI Scores</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M</td>
</tr>
<tr>
<td><strong>All Participants</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest</td>
<td>52</td>
<td>3.67</td>
</tr>
<tr>
<td>Value</td>
<td>52</td>
<td>3.5</td>
</tr>
<tr>
<td>Choice</td>
<td>52</td>
<td>4.89</td>
</tr>
<tr>
<td><strong>Completed Intervention (Treatment and Control)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest</td>
<td>29</td>
<td>4.93</td>
</tr>
<tr>
<td>Value</td>
<td>29</td>
<td>4.74</td>
</tr>
<tr>
<td>Choice</td>
<td>29</td>
<td>6.61</td>
</tr>
<tr>
<td><strong>Treatment Group</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest</td>
<td>25</td>
<td>5.01</td>
</tr>
</tbody>
</table>
To determine if the difference in these means were significant, and independent samples t-Test was run to compare the differences in the means between the control and treatment group, as shown in Table 50. No statistically significant difference was found in relationship to interest ($p = .4$), value ($p = .23$), or choice ($p = .78$).

Table 50

*Independent Sample t-Test Intrinsic Motivation Inventory*

<table>
<thead>
<tr>
<th>Paired Dif</th>
<th>T</th>
<th>Df</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intrinsic Motivation Inventory – Interest in Activity</td>
<td>-.53</td>
<td>-.86</td>
<td>27</td>
</tr>
<tr>
<td>Intrinsic Motivation Inventory – Value in Activity</td>
<td>-.67</td>
<td>-1.24</td>
<td>27</td>
</tr>
</tbody>
</table>
In order to overcome two limitations of the study could have impacted these results, with the first being the small sample size and the second being the relatively short length of the intervention, the researcher supplemented this research question’s analysis by looking at data related to student responses. To begin, the researcher looked at responses to all four prompts to qualitatively compare the progression.

The researcher coded places in which students identified themselves as possible obstacles. One specific student, a 16-year-old female student with a B grade point average, listed herself as an obstacle in each of the four prompts. For the first, her strategy for overcoming it was to reference heaven. In the second, she did not list a specific strategy for overcoming herself, but instead listed two possible, yet different, steps. In the last two, her strategies were to reflect on why she was working on her goal and the bigger picture. This could indicate a possible improvement in self-regulated motivation because the student started to assume responsibility for overcoming obstacles.

The researcher also looked at response lengths to see if an increase or decrease in word count could potentially indicate improved competence. However, what was discovered was that the first and third prompts received longer responses than the second and fourth, which would seem to indicate that the different nature of the prompts made this type of analysis difficult to do.

Finally, the researcher looked at students’ responses in order to determine how and when students identified a lack of self-regulated motivation as a problem. To code
for this, the researcher looked at two questions that specifically asked students to identify an obstacle in the way of their success. These two prompts were the first and last of the intervention. First, the researcher looked for obstacles dealing with a lack of student’s motivation. This meant looking for the actual word or phrase, but also synonyms, like boredom or lack of passion. Next, the responses were coded for places in which students identified themselves as obstacles. This did not mean finding skills or features of oneself, like a lack of organizational skills or attention deficit. Instead, the researcher looked for places where students simply labeled themselves as the problem or said things like, “losing faith in myself.”

Thirteen times students said they themselves could get in their way, and nine times students said a lack of motivation could. When looking at specific details of this, the researcher discovered that of the 11 students in the treatment group who identified themselves or their motivation as an obstacle, seven of them only listed that obstacle in the final prompt (three listed it for both prompts, and one only listed it in the first prompt). This could potentially mean that the intervention helped students realize that the only obstacles that could prevent them from finding success were themselves, and that they would be able to overcome other situations that attempt to block their path. For example, one student started the intervention by saying things that could get in the way would be filling out paperwork and finding transportation. During the final week, however, the student wrote, *The only thing that could stop me from achieving my career goal is myself... I've been trying recently however to start looking at the positive and taking everything one step at a time and reminding myself that if I mess up that it won't be the end of the world.*
The positive correlation between the intervention and motivation indicate the pilot’s success in this area, yet because of a limited sample size and a limited length of intervention, the researcher does not find it possible to conclusively state that this intervention had an effect on internally regulated motivation. However, in the focus group, the researcher asked students if teachers’ responses had made them think of things they had not before, and the students all either stated it had, or gave examples of comments their teachers had made that they remembered.

One additional – and interesting – item to note, however, was the response to the gift cards that were randomly given to students who completed each step of the intervention. In the focus group, a student brought up the gift cards and wondered if anyone had gotten one. Other students either verbally or non-verbally stated that the gift cards were motivation to complete the intervention. However, most students did not pick up their gift cards when they won. Only seven did, and even those who did pick up their gift cards did not always pick them up immediately. When I brought this up, one student responded that students saw there was an opportunity to get a gift card and learn about themselves, and then continued with the program because they decided they would like to learn about themselves. This might signify a move from extrinsic motivation to intrinsic due to the intervention. Mrs. Harker’s case indicates it might.

Unlike teachers of older students, Mrs. Harker noted that her ninth grade students would come in and tell her they had finished their responses and were ready for her to give them feedback. She stated that she spent about ten to fifteen minutes responding to each student and said she was supportive of the program and its importance for students. She also said that she noticed in students’ responses when something was wrong. Her
example was of a student who had behavioral issues that resulted in her needing to take a leave from school. Mrs. Harker said that the students’ responses changed and she started to pull away from Mrs. Harker when her behavior turned poor.

Additionally, it is important to note how teachers’ perceptions changed as a result of this study. After the intervention, Mrs. Harker’s belief that students viewed obstacles as signs of failure increased, while her perception that students have obstacle strategies in place decreased. She also went from strongly believing students thought about their future to only somewhat thinking that was the case. Additional research into this effect should be considered in future iterations of this intervention.

Future research should look to increase the sample size and analyze other changes in student behavior based on teacher feedback. Additionally, since internally regulated motivation traditionally decreases in high school (Otis et al., 2005), the fact that this study saw an increase in it shows potential for the intervention. Whether or not this intervention mediates this slide should be analyzed to see if Hypothesis 5 holds true in its supposition that improving internally regulated motivation through teacher-provided change-oriented feedback.

**Research Question 6: What are student perceptions of the intervention?**

To answer this question, the researcher used the scissor-and-sort technique to find portions of the focus group transcripts that were relevant to this research questioning (Stewart & Shamdasani, 2014).

One question specifically dealt with student perceptions of the intervention. It asked, *Do you feel the program was more positive or more negative?* Each of the six students in the focus group – mostly responding to the question in unison – stated it was
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positive. One student noted that the types of questions really made her think. In follow-up discussion to their answers, students said that they thought the program helped them think a lot about the future, though they only stated that it helped a little for creating strategies. When asked to explain, the students said they would recommend that future questions be more specific to them, so they felt more connected to the strategies that were developed, with one student saying that if questions were more specific to her she would change from thinking about future scenarios as “anybody could do this” to “I would be able to do this.”

When asked to rank the program from one to 10, with 10 being the best, student responses ranged from six or seven to eight, with most responses hitting in the eight range. When asked what they would do differently the next time the program was used, two students suggested that the testimonials could have been better. However, the in-software answers dealing with the testimonial did not seem to support this. On a seven-point Likert scale asking if students found the testimonial interesting, the mean for all four sessions was 4.87. Since certain testimonials averaged higher, future testimonials can look more like the better-received ones.

Students were very interested in how the intervention was created, and had lots of advice on how to roll it out on a larger scheme. They suggested specific grades it should be geared toward, though none agreed because they thought of reasons it would be good at every level. They also wanted to talk about how teachers should be picked for students – the consensus was that teachers “in the middle” should be picked, which meant they felt students should be matched with that teachers students knew but who weren’t their favorite adults in the school.
Students had no specific criticism about the software itself except for the color scheme, which is shown in Figure 7. They did however note that the programmer did a nice job programming the software and wanted that passed on to him.

Figure 7

*R2M Log-in Screen*

No students reported having issues with using the software during the intervention, and many used different platforms at different and various times – from cell phones or laptops – to complete tasks. More information on this can be found in the next research question.

**Research Question 7: In what ways does an online intervention software system affect student intervention interaction?**

The first step of analysis was looking at the intra-intervention post-prompt survey questions. Two questions specifically focused on students’ ability to understand and respond to the prompt. The questions used a seven point Likert scale for assessment,
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with one indicating not at all true and seven indicating very true. The mean response for these two questions was above six, which shows students both felt they were able to respond to prompts and to understand them. This can be seen in Table 51. From these results, it appears the online system was not a barrier to understanding the demands of the prompt.

Table 51

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Range</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understood Prompt</td>
<td>29</td>
<td>7.00</td>
<td>6.08</td>
<td>1.32</td>
</tr>
<tr>
<td>Able to Respond to</td>
<td>29</td>
<td>7.00</td>
<td>6.03</td>
<td>1.52</td>
</tr>
</tbody>
</table>

When asked about program efficacy in the teacher focus group, one teacher said he thought it was nice that they were able to provide feedback, sit on it for a bit, and then return to it to make sure they had said what they wanted to. One reported she thought that they learned things about their students they would not have in a one-on-one conversation. One non-focus group teacher noted he especially liked the platform of the intervention because it was like “silent mentoring.” In addition to finding the online system useful, teachers did not perceive any barriers to using an online application instead of in-person or hard copy responses.

Through the coding of both the student and adult focus groups, it appears all participants liked the online nature of the intervention. One student did suggest that students be allowed to write on paper and pencil if they are more comfortable with that
and then have an adult type it up and enter it for them. There were no reported student issues with the software, and in fact, the only reported problem came with the survey instrumentation’s ease of access on cell phones, which was run through a third-party company Survey Gizmo.

**Conclusions**

Interventions designed to increase post-secondary success for disadvantaged populations are vast but significantly ineffective (Gándara, 2001). The National Postsecondary Education Cooperative Working Group on Access to Postsecondary Education, under the direction of the National Center for Education Statistics, performed a large-scale analysis of bridge programs designed to improve college attrition rates for disadvantaged students (Gándara, 2001). Their vast study of programs from across the country found little hope in the interventions currently in place in the nation’s k-12 schools. The work group found that several things stopped these programs from being effective, such as records of program contact, monitoring and reporting of program activity, cost, small group sizes, and thorough evaluations of the programs. The Relate to Motivate intervention combats all of these limitations, with many of these features being built into the software’s record-keeping system. Additionally, two of the six recommendations from the work group are facets of the program: mentorship and cultural responsiveness.

When students asked about possible things that could prevent their dreams from coming true, many of them stated very unrealistic and tragic things, like their own death, death of loved ones, or natural disasters. Some students stated that as long as one believed in oneself, they would be able to achieve their goals. Yet, many students also
noted that the only thing standing in their way is themselves – from boredom to lack of motivation, to specifically not liking to type. Teacher feedback – or mentorship, seemed to mediate this. Focus group students were adamant that the program should continue at Dairy School, and many had ideas about which students and which grades should participate. They wanted more than just teachers to participate. Likewise, teachers felt that the program was worthwhile and also wanted it expanded to other adults so that a circle of mentoring and support could aid students.

From this small pilot study, some of the researcher’s assumptions appeared to be confirmed either via correlation or qualitative data. Students of poverty often have unrealistic ideas of future struggles and limited knowledge of strategies they can use to overcome obstacles. Teacher-provided feedback helps students think about future strategies, and also have more positive perceptions of their future selves.

The online delivery of this intervention was effective and appropriate. Teachers liked it because it provided time to reflect and draft appropriate responses. Students liked it and wanted more of it, in that they wanted the ability to respond to their teacher and follow up with them. However, it must be noted that there were limitations to this initial pilot study that restricted the researcher’s ability to observe some significance.

The merging of three different constructs – writing about future selves, mental contrasting, and change-oriented teacher feedback – in order to effectively reach students from low SES backgrounds appeared a valid and successful merger. As an online program that is easy to implement, can serve large populations and can serve students for any length of time, R2M has the potential to serve schools effectively. As indicated by this dissertation, students’ feelings of perceived competence are positively associated
with achievement, and students participating in this intervention have a more positive correlation between the two.

**Discussion**

There is an interesting dissonance in the literature dealing with motivational interventions for students from low socioeconomic statuses. Lazowski and Hulleman’s (2015) large meta-analysis of motivational interventions impacting nearly 40,000 students showed that by and large these interventions are successful in increasing motivation and academic outcomes. Yet this same review pointed out that intervention research has decreased since the 90’s (Lazowski & Hulleman, 2015). And the National Center for Education Statistics calls for more research and evaluation to be performed on interventions in place at the nation’s neediest schools (Gándara, 2001). This intervention, and the associated study, will hopefully erase the discord surrounding motivational interventions for students of need. Its effectiveness and the promising evaluation of it can serve to show how and why interventions dealing with students from backgrounds of poverty can be effective.

**Mentorship**

Though this author did not describe the intervention to participants as a mentorship program, in each of the focus groups, both students and adults referred to it as such. This is an apt synonym for the teacher-response facet of the intervention, and also speaks to its success, since mentoring has been shown as an effective tool for enhancing college and career readiness (Bierema & Merriam, 2002). Bierema and Merriam (2002) noted that when delivered in an online format, mentoring can transcend the walls of race and class that traditional face-to-face mentoring programs often suffer from. The Relate
to Motivate exploratory pilot lent validity to this idea, in that students reported they found value in guidance from teachers they would not normally have discussed such personal issues with.

Students are not the only ones who benefit from student-mentor relationships. Teachers who participate in these activities find more satisfaction in their jobs (Archambault & Crippen, 2009), which is especially helpful for teachers in schools for students from low SES, whose feelings of efficacy and decrease while burnout increases (Hoy & Spero, 2005; Tucker et al., 2005). To support both teachers and students in this activity, schools need to put in place components to help the program operate.

In a study of programs and teachers in 25 states, only two percent of online educators list mentoring as part of their job requirements (Archambault & Crippen, 2009). Many of the teachers surveyed stated they were content area coaches. When mentoring happens, not only does it build relationships, but it improves content delivery (Archambault & Crippen, 2009). This should help schools realize that the time and resources invested in a mentoring program not only benefit students’ long-term success, but the content delivery upon which schools are evaluated on. Thus, schools need to make sure they support interventions like this with time (Archambault & Crippen, 2009) and signs of their commitment (Bierema & Merriam, 2002).

In addition to these program supports, programs should include student goal setting, students communicating their backgrounds to teachers, and helping to create familiarity. All of these features are embedded into R2M, which makes it appealing for schools looking to implement mentoring programs.

**Motivation**
Positive mentoring relationships are also essential for fostering academic motivation in students. Relationships with teachers can increase internally regulated motivation (Brown-Wright et al., 2011; Deci et al., 1991; Ryan & Deci, 2000). However, sometimes students do not feel as if their schools and teachers hold the same values as their families and communities (Brown-Wright et al., 2011). When students believe that their home values do not mesh with the ones promoted by the school, academic motivation decreases (Brown-Wright et al., 2011). If a student’s home environment is not conducive to academic motivation, it is possible that social support can mediate this amotivation (Legault et al., 2006). Because this intervention focuses on the relationship-building aspect of motivational theory – through the use of teacher-provided change-oriented feedback – its situation within the literature of both mentorship and academic motivation is worth examining.

**Academic Motivation**

Students from backgrounds of poverty are more likely to drop out of school (Kearney & Levine, 2014; Murnane, 2013). When racial and ethnic factors are considered, students who do graduate are also more likely to take longer than four years to receive their diploma (Murnane, 2013). If a student is poor, not White, and also happens to be male, they are at the highest risk for dropping out (Kearney & Levine, 2014; Murnane, 2013). Yet, not all students who fit in one of those three boxes is likely to drop out. One predictor of a student’s likelihood to drop out is their engagement in school, or academic motivation (Legault et al., 2006). In addition to the concern of drop out potential, low socioeconomic status is linked to lower achievement (Lareau, 2011;
Rury & Mirel, 1997; Sirin, 2005). This lowered academic performance is seen both in students’ school grades and on standardized tests (Schultz, 1993).

The country’s older students are most likely to suffer from a lack of intrinsic motivation. When entering middle school and rising through high school, the drop in motivation is most noticed (Gottfried, Fleming, & Gottfried, 2001; Harter, 1981; Otis et al., 2005; Pajares & Graham, 1999). This is most likely due to the very nature of schools themselves. The transition to high school includes and emphasis on specific curricula and Common Core testing. The controlling nature of high stakes testing deters internally-regulated motivation (Ryan & Deci, 2000). Supporting this belief is the finding that only in the core, tested areas – math, reading, and science – is a drop in motivation found, while other areas, like social studies, do not see the same decrease (Gottfried et al., 2001).

Not only does intrinsic motivation decrease, but internally regulated motivation does as well (Otis et al., 2005). This drop in motivation must be countered, since motivation is a predictor of academic success (Schultz, 1993) and can even improve IQ scores (Duckworth, Quinn, Lynam, Loeber, & Stouthamer-Loeber, 2011).

Unfortunately, motivation is difficult to change at this stage in a student’s life (Vazou et al., 2012; Gottfried et al., 2001). Yet, like the needs assessment in this dissertation showed, not all motivation decreases, and other motivations, most often social ones increase (Otis et al., 2005; Harter, 1981). The use of the social aspect of motivation, as this intervention employs with teacher-provided feedback, is most likely one of the reasons the program found a positive correlation between it and motivation. The qualitative findings that students were happy with the feedback from teachers, even when they stated they would not have chosen to work with that teacher shows that this
type of intervention can be utilized to positively impact motivation in a school setting. That it can do that during an age when most students lose their motivation is especially promising.

This intervention does not only have potential for high school students. The better a student’s motivation at a young age, the more likely they are to continue being academically internally motivated in high school (Gottfried et al., 2001). The tenets of the Self-Determination Theory, especially the focus on connections, and mental contrasting are effective with younger students as well. Employing this intervention at the elementary age might decrease some of the need for this type of intervention with older students.

Connectedness is not the only aspect of the Self-Determination Theory that was positively affected through this intervention. Students’ feelings of competence about their futures also increased through the program.

**Competence**

Motivation decreases when a student lacks confidence in their ability to succeed (Legault et al., 2006). Like the trajectory of motivation, students’ feelings of efficacy drop as they move through the scholastic years (Fredricks & Eccles, 2002). This drop might also be due to the changing nature of the school system, in that high school grades and evaluations are based on normative testing that facilitates students’ comparison to other students (Fredricks & Eccles, 2002). When students receive bad grades or score poorly compared to their peers, their feelings of self-efficacy decrease (Legault et al., 2006).
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The older a student is, the more reliable they are on their own thoughts about their abilities (Harter, 1981), and the less likely their parents’ perceptions of their abilities are to influence their successfulness (Fredricks & Eccles, 2002). This sets up a dangerous dip in students’ feelings of competence, lending to further drops in internally regulated motivation, for students who do not believe they can do well in something are not interested in doing that thing (Fredricks & Eccles, 2002).

This pilot intervention demonstrated that change-oriented feedback is able to help overcome these negative perceptions because even though it points out flaws in students thinking, it allows students to have vicarious experiences through their teachers’ stories of similar struggles and success. Vicarious experiences are one of the ways efficacy can increase or be improved (Pajares & Urdan, 2006; Pajares & Schunk, 2001; Schunk, 1991). Students in this program reported changes in thoughts and activities based on adult feedback, and quantitative data analysis showed that their future efficacy increased.

Possible Future Selves

Qualitative analysis of students’ perceptions of their future, including obstacles they might encounter and their ability to succeed showed that students often lacked realistic perceptions about how to overcome stumbles and plan for success. These types of positive fantasies are predictive of poor scholastic performance (Kappes, Oettingen, & Mayer, 2012). Though often used in urban schools, the practice of lining walls with pictures of famous and successful adults and college banners does not align with academic improvement (Duckworth et al., 2013). Like shown in studies before (Kappes et al., 2012), this investigation demonstrated that students from backgrounds of poverty have high expectations for their futures.
However, mental contrasting, or imagining future obstacles, has been shown to improve student performance (Duckworth et al., 2013; A. Kappes et al., 2012; Gollwitzer et al., 2011). Envisioning possible future selves has also been successfully used to help students become more college and career ready (Lamb, 2011; Layous et al., 2013; Oyserman, Destin, & Novin, 2014; Oyserman et al., 2006; Oyserman et al., 1995; Yowell, 2002). By merging these two constructs, this intervention showed success in helping students of poverty more realistically prepare for their futures. The online nature of this intervention was an additional success.

**Online Interventions**

Online or web-based interventions have increased since the 90’s (Wantland, Portillo, Holzemer, Slaughter, & McGhee, 2004). The success of therapeutic interventions, as demonstrated by Barak, Hen, Boniel-Nissim and Shapira’s (Barak, Hen, Boniel-Nissim, & Shapira, 2008) meta-analysis of 92 empirical studies, is similar to face-to-face programs. This is the same as was shown in a previous possible future selves writing intervention (Layous et al., 2013). Yet the researcher was unable to find any conclusive information on other studies specifically dealing with the success of online interventions geared toward improving college and career readiness for students from low SES. This intervention’s online success and ease of implementation should serve to encourage the use of this medium within school settings.

**Limitations**

The nature of piloting a never-before tested program in a school devoted to student success is a difficult one. For that reason, the study lacked the large number of teachers and students who could have helped achieve statistical significance in many of
the research areas. This small sample size also negatively affected the size of the control group.

Likewise, because the school could not devote time or resources to the program, teacher and student completion was not as high as it would have been with time and training built into the school system. This was shown in students’ reasons for dropping out of the study and the time it took for teachers to respond to prompts. Teachers also did not have the opportunity for professional development in providing culturally sensitive, change-oriented feedback, resulting in variations in quality of feedback provided.

The scholastic calendar year did not allow for an uninterrupted timeline. This study was impacted by academic calendar breaks, marking period windows, and student semester transitions. Though these constraints are often found in scholastic settings, it must be noted that the interrupted timeline was a limitation. When beginning the study, students had just returned from winter break, with enrollment and pre-testing occurring before break. The intervention overlapped two semesters, so this impacted not only students’ time commitments but teachers’ as well. Because of the tight timing for the intervention window, it was difficult for the researcher to intervene if a teacher had been late to respond to a prompt. For example, since there was only a one-day window between the requested student deadline and the opening of a new prompt, teachers were given a short window to respond. When reminders were factored in to this, at least a week would pass before the researcher would know for sure if a prompt had been missed or ignored. Then, by allowing a teacher a week to respond to reminders, some students did not receive feedback. With more time, and school support, completion rates for the program would most likely have increased.
Both students and teachers would have benefitted from more training and practice with the software. Teachers, particularly would have been aided by seeing some real-life examples, which can be done in future iterations now that the first collection has been completed. Additionally, the ability to have more time to meet with teachers during the intervention would have added more depth to the qualitative analysis.

Because this intervention utilized three different theories, there was not one instrument that could measure the intersectionality of those three constructs. Because individual instruments had to be used and combined, some gains or losses might have been missed. Ideally, future analysis of this intervention would involve a survey that could more efficiently assess student progress.

Finally, this intervention took place in a school in which students had easy access to technology. While school technology access is notable in American schools, the actual use of it in urban schools is not as predominant (Wachira & Keengwe, 2011). Those looking to replicate this type of intervention must be sure to first assess the accessibility of technology in schools and also the ability of all users to work with it.

**Implications**

Teachers noted in the focus group that this intervention enabled them to have conversations about students’ futures like they were not usually able to in class. Students added that one benefit of not being able to pick which teacher gave them feedback – as normally occurs when students choose to solicit feedback on their futures – was that it meant they would hear what they needed to hear about their future, not what they wanted to hear. The modern school curriculum does not allow much time for students to think about future obstacles and ways to overcome them. This intervention is a low-risk and
RELATE TO MOTIVATE

non-time intensive way to incorporate this important component to college and career readiness. It encourages and supports mentoring and feedback loops that not only increase feelings of competence, but show signs of improvement in academic motivation.

This intervention could be employed successfully in many settings. As mentioned earlier, the program could be implemented at the primary school level to help buffer students’ academic motivation and encourage its maintenance in later years. It could aid students as they begin their high school careers in order to prepare them for the more rigorous secondary experience and declining school-based support of intrinsic motivation. It would also be helpful for students preparing to transition to their post-secondary plans, a time when the awareness of strategies will be useful to help encourage the likelihood of achievement. The use of it at the collegiate level could function as the peer and faculty protective support needed to help eliminate summer melt, when students who are enrolled in college fail to show up for fall semester, and increase student retention during the pivotal freshman year of college (Duvall & Murtaugh, 2016). If utilized in online courses, programs, and institutions, this intervention has the ability to create the community necessary for retaining students, which these programs do at a lower rate than face-to-face programs (Gleason, 2004). Based on the research in this dissertation’s literature review, modifications could be made to tailor the intervention toward specific populations. Additionally, demographic data could be collected before each implementation to further tailor the experience and aid benefits for each group targeted.

Finally, this research shows it is possible for schools to execute broadly implemented yet low-cost interventions geared at increasing motivation. Schools serving
disadvantaged students should look to multiple theories to see how those theories can be blended to counter impediments often found in their settings. Evaluation of these programs can aid other schools in finding successful motivational interventions specifically geared to students from backgrounds of poverty.

Future Research

Now that the intervention has been piloted and vetted, future research needs to occur in spaces without the aforementioned limitations. Ideally, this intervention would be applied in a large scale setting, in which the curriculum was built into the school system as a supported program. Most especially, the program should be spread out over a longer period of time so that student growth could more effectively be monitored, while using an evaluative measure specifically designed for this intervention. Additional measurements should be used once the intervention has been completed to see how long the effects last. Because this program has the potential to positively influence students at other levels, studies of elementary, college, and online students should occur.

Additionally, other constructs should be measured, based on findings that suggest this intervention might impact them. Specifically, the effect on teachers’ perceptions of student preparation should be studied. At least two of the teachers participating in the focus group, Mr. Jay and Mrs. Harker, showed a decrease in their perceptions of students’ preparation and awareness of future strategies over the course of the intervention. Research into what this means would help shape future interventions and teacher trainings. Likewise, how teachers deliver codes should be analyzed and addressed.

Consideration should be given as to whether or not teachers need training on culturally
relevant feedback. One way to improve upon teacher feedback is to supply options, most likely through before-intervention training, for providing feedback to students.

It would be helpful to also examine students’ motivations for dropping out of the program midway. This will not only help prevent attrition, but could also highlight some strengths or weaknesses within this type of intervention.

Instruments specifically designed to assess the effectiveness of the program’s merged constructs should also be created, vetted, and then used to evaluate the intervention. Ideally, longitudinal studies should be put in place to determine the lasting effect of students who participated in this type of program.

**Conclusion**

After assessing the needs of one group of students living and learning at a private school, this researcher wondered if the ability to be able to harvest three successfully vetted theories – the Self Determination Theory, writing about possible future selves, and mental contrasting, could exist in an online intervention. The successful implementation of this program, and positive results, point to an easy to implement program schools can utilize to help in their missions to aid and facilitate student growth in our neediest population.

Educators have long been concerned when students with ability have failed to achieve due to risk factors connected with poverty (Reis et al., 2005). This aim of this dissertation was not to erase the achievement gap affecting students from backgrounds of poverty, nor could it be. The gap is complicated and has many underlying causes. This intervention is not the solution to deeper issues associated with the nation’s poverty. However, it may help mediate some of the issues associated with poverty.
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Footnotes

1This information was provided to the school by the school’s State Department of Education. Growth was determined by scores on the state’s Common Core aligned standardized test system.

2As stated on the Dairy School’s website, students have an average family income of $10,000 less than the federal poverty level.

3This information was provided in the school’s 2013-2014 annual report, which is available on the school’s website.

4The mission statement of the school addresses the desire for students to lead productive lives.
RELATE TO MOTIVATE

References


Relate to Motivate


RELATE TO MOTIVATE


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Kearney, M. S., & Levine, P. B. (2014). *Income Inequality, Social Mobility, and the Decision to Drop Out of High School,*


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and behavioral interventions. *The Journal of Behavioral Health Services &

implementation and its relationship to outcomes in K–12 curriculum intervention

Oettingen, G. (1999). Free fantasies about the future and the emergence of developmental
goals. *Action and Self-Development: Theory and Research through the Life Span,*,
315-342.

cigarette consumption: Mental contrasting of future with reality. *Psychology and
Health, 25*(8), 961-977.

free fantasies about the future into binding goals. *Journal of Personality and Social
Psychology, 80*(5), 736.


performance and self-regulation. *Journal of Experimental Social Psychology, 53*, 70-
78.

academic setting: A 3-year longitudinal study. *Journal of Educational Psychology,
97*(2), 170-183. doi:10.1037/0022-0663.97.2.170


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RELATE TO MOTIVATE


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APPENDIX A

Needs Assessment Study One Instrumentation (Adult)

Please complete this survey by reflecting on students you have interacted with at this school.

I am a(n)
A) Administrator
B) Teacher
C) Houseparent
D) Coach
E) Counselor/Social Worker
F) Club Advisor
G) Other ______________

I identify as
A) White
B) Hispanic or Latino
C) Black or African American
D) Native American or American Indian
E) Asian/Pacific Islander
F) Multiracial
G) Other
H) Choose not to disclose

I work with students in grades (select all that apply).
A) 9
B) 10
C) 11
D) 12

I have worked at this school for _____ years.
A) Fewer than 3
B) 3-6
C) 6-10
D) 10-15
E) 15 or more

I mainly see students (select all that apply)
A) In school
B) Outside of school

How academically motivated are students?
A) Very Academically Motivated
B) Somewhat Academically Motivated
C) Neither Motivated nor Unmotivated  
D) Somewhat Academically Unmotivated  
E) Very Academically Unmotivated

How confident are students about their abilities to succeed at academics?  
A) Students are very confident about their academic abilities.  
B) Students are somewhat confident about their academic abilities.  
C) Students are neither confident nor unconfident.  
D) Students are somewhat unconfident about their academic abilities.  
E) Students are very unconfident about their academic abilities.

How supported do students feel by adults?  
A) Students feel very supported.  
B) Students feel somewhat supported.  
C) Students feel neither supported nor unsupported.  
D) Students feel somewhat unsupported.  
E) Students feel very unsupported.

How academically supported do students feel by their friends?  
A) Students feel very supported.  
B) Students feel somewhat supported.  
C) Students feel neither supported nor unsupported.  
D) Students feel somewhat unsupported.  
E) Students feel very unsupported.

How important is a student’s academic success in regards to their future?  
A) Student academic success is very important.  
B) Student academic success is somewhat important.  
C) Student academic success is neither important nor unimportant.  
D) Student academic success is somewhat unimportant.  
E) Student academic success is very unimportant.

Motivation is one of the key components of academic success.  
A) Strongly Agree  
B) Agree  
C) Neither Agree nor Disagree  
D) Disagree  
E) Strongly Disagree

Motivation is important to academic success.  
A) Strongly Agree  
B) Agree  
C) Neither Agree nor Disagree  
D) Disagree  
E) Strongly Disagree
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Students do not need motivation to achieve high grades.
   A) Strongly Agree
   B) Agree
   C) Neither Agree nor Disagree
   D) Disagree
   E) Strongly Disagree

Students will perform better in school if their academic motivation increases.
   A) Strongly Agree
   B) Agree
   C) Neither Agree nor Disagree
   D) Disagree
   E) Strongly Disagree

Motivation is a learned behavior.
   A) Strongly Agree
   B) Agree
   C) Neither Agree nor Disagree
   D) Disagree
   E) Strongly Disagree

Motivation can be taught.
   A) Strongly Agree
   B) Agree
   C) Neither Agree nor Disagree
   D) Disagree
   E) Strongly Disagree

Negative consequences are good ways to increase academic output.
   A) Strongly Agree
   B) Agree
   C) Neither Agree nor Disagree
   D) Disagree
   E) Strongly Disagree

Positive consequences are good ways to increase academic output.
   A) Strongly Agree
   B) Agree
   C) Neither Agree nor Disagree
   D) Disagree
   E) Strongly Disagree

Scholarship money motivates students to do well in school.
   A) Strongly Agree
   B) Agree
   C) Neither Agree nor Disagree
It is important for students to have consequences for failed assignments.
   A) Strongly Agree
   B) Agree
   C) Neither Agree nor Disagree
   D) Disagree
   E) Strongly Disagree

It is important for students to receive rewards for academic success.
   A) Strongly Agree
   B) Agree
   C) Neither Agree nor Disagree
   D) Disagree
   E) Strongly Disagree

Students would not be successful if allowed to make frequent academic decisions.
   A) Strongly Agree
   B) Agree
   C) Neither Agree nor Disagree
   D) Disagree
   E) Strongly Disagree

Students at this school are allowed to decide how to complete assignments.
   A) Strongly Agree
   B) Agree
   C) Neither Agree nor Disagree
   D) Disagree
   E) Strongly Disagree

Students at this school are allowed to decide how to study.
   A) Strongly Agree
   B) Agree
   C) Neither Agree nor Disagree
   D) Disagree
   E) Strongly Disagree

Students would be more successful if allowed to make more academic decisions.
   A) Strongly Agree
   B) Agree
   C) Neither Agree nor Disagree
   D) Disagree
   E) Strongly Disagree

Students feel competent about their academic abilities.
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A) Strongly Agree  
B) Agree  
C) Neither Agree nor Disagree  
D) Disagree  
E) Strongly Disagree

When students fail a class, it is because they don’t have the aptitude needed to pass. 
A) Strongly Agree  
B) Agree  
C) Neither Agree nor Disagree  
D) Disagree  
E) Strongly Disagree

Students do not have high feelings of academic worth.  
A) Strongly Agree  
B) Agree  
C) Neither Agree nor Disagree  
D) Disagree  
E) Disagree  
F) Strongly Disagree

All students have the ability to get good grades.  
A) Strongly Agree  
B) Agree  
C) Neither Agree nor Disagree  
D) Disagree  
E) Strongly Disagree

Some students are not cut out for college.  
A) Strongly Agree  
B) Agree  
C) Neither Agree nor Disagree  
D) Disagree  
E) Strongly Disagree

Some students are not smart enough to get all A’s.  
A) Strongly Agree  
B) Agree  
C) Neither Agree nor Disagree  
D) Disagree  
E) Strongly Disagree

Summer school motivates students to pass their classes.  
A) Strongly Agree  
B) Agree  
C) Neither Agree nor Disagree
RELATE TO MOTIVATE

D) Disagree
E) Strongly Disagree

Students are motivated to spend time with friends.
   A) Strongly Agree
   B) Agree
   C) Neither Agree nor Disagree
   D) Disagree
   E) Strongly Disagree

Students are motivated to spend time with their family.
   A) Strongly Agree
   B) Agree
   C) Neither Agree nor Disagree
   D) Disagree
   E) Strongly Disagree

Students are motivated by sports.
   A) Strongly Agree
   B) Agree
   C) Neither Agree nor Disagree
   D) Disagree
   E) Strongly Disagree

Students are motivated by afterschool activities.
   A) Strongly Agree
   B) Agree
   C) Neither Agree nor Disagree
   D) Disagree
   E) Strongly Disagree

Students are motivated to listen to music.
   A) Strongly Agree
   B) Agree
   C) Neither Agree nor Disagree
   D) Disagree
   E) Strongly Disagree

Students are motivated to play video games.
   A) Strongly Agree
   B) Agree
   C) Neither Agree nor Disagree
   D) Disagree
   E) Strongly Disagree

Students are motivated to read for pleasure.
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A) Strongly Agree
B) Agree
C) Neither Agree nor Disagree
D) Disagree
E) Strongly Disagree

Students are motivated to be on the internet.
A) Strongly Agree
B) Agree
C) Neither Agree nor Disagree
D) Disagree
E) Strongly Disagree
APPENDIX B

Needs Assessment Study One Instrumentation (Student)

Please complete this survey by reflecting on your personal beliefs. Select the answer that most closely matches your feelings.

I am in ____ grade.
A) 9th
B) 10th
C) 11th
D) 12th

I have attended this school for ____ years.
A) 1
B) 2-3
C) 3-5
D) 5-7
E) 7 or more

I identify as
A) White
B) Hispanic or Latino
C) Black or African American
D) Native American or American Indian
E) Asian/Pacific Islander
F) Multiracial
G) Other
H) Choose not to disclose

My current grade average is
A) A
B) B
C) C
D) D
E) F

How important are grades to you?
A) Very Important
B) Somewhat Important
C) Neither Important nor Unimportant
D) Somewhat Unimportant
E) Very Unimportant

How important is spending time with your friends?
A) Very Important
B) Somewhat Important
C) Neither Important nor Unimportant
D) Somewhat Unimportant
E) Very Unimportant

How important is spending time with your family?
A) Very Important
B) Somewhat Important
C) Neither Important nor Unimportant
D) Somewhat Unimportant
E) Very Unimportant

How important are afterschool activities?
A) Very Important
B) Somewhat Important
C) Neither Important nor Unimportant
D) Somewhat Unimportant
E) Very Unimportant

How important is free time?
A) Very Important
B) Somewhat Important
C) Neither Important nor Unimportant
D) Somewhat Unimportant
E) Very Unimportant

How important is listening to music?
A) Very Important
B) Somewhat Important
C) Neither Important nor Unimportant
D) Somewhat Unimportant
E) Very Unimportant

How important are sports?
A) Very Important
B) Somewhat Important
C) Neither Important nor Unimportant
D) Somewhat Unimportant
E) Very Unimportant

How important are video games?
A) Very Important
B) Somewhat Important
C) Neither Important nor Unimportant
D) Somewhat Unimportant
E) Very Unimportant
How important is reading for pleasure?
   A) Very Important
   B) Somewhat Important
   C) Neither Important nor Unimportant
   D) Somewhat Unimportant
   E) Very Unimportant

How important is time on the internet?
   A) Very Important
   B) Somewhat Important
   C) Neither Important nor Unimportant
   D) Somewhat Unimportant
   E) Very Unimportant

How important is free time?
   A) Very Important
   B) Somewhat Important
   C) Neither Important nor Unimportant
   D) Somewhat Unimportant
   E) Very Unimportant

Scholarship money makes me want to do well in school.
   F) Strongly Agree
   G) Agree
   H) Neither Agree nor Disagree
   I) Disagree
   J) Strongly Disagree

I believe my teachers want me to get good grades.
   A) Strongly Agree
   B) Agree
   C) Neither Agree nor Disagree
   D) Disagree
   E) Strongly Disagree

I believe my coaches and club advisors want me to get good grades.
   A) Strongly Agree
   B) Agree
   C) Neither Agree nor Disagree
   D) Disagree
   E) Strongly Disagree

I believe my friends want me to get good grades.
   A) Strongly Agree
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B) Agree
C) Neither Agree nor Disagree
D) Disagree
E) Strongly Disagree

I believe my family wants me to get good grades.
A) Strongly Agree
B) Agree
C) Neither Agree nor Disagree
D) Disagree
E) Strongly Disagree

I believe my houseparents want me to get good grades.
A) Strongly Agree
B) Agree
C) Neither Agree nor Disagree
D) Disagree
E) Strongly Disagree

If I fail a course, I will disappoint my family.
A) Strongly Agree
B) Agree
C) Neither Agree nor Disagree
D) Disagree
E) Strongly Disagree

If I fail a course, I will disappoint my houseparents.
A) Strongly Agree
B) Agree
C) Neither Agree nor Disagree
D) Disagree
E) Strongly Disagree

If I fail a course, I will disappoint my teachers.
A) Strongly Agree
B) Agree
C) Neither Agree nor Disagree
D) Disagree
E) Strongly Disagree

If I fail a course, I will disappoint my coaches and club advisors.
A) Strongly Agree
B) Agree
C) Neither Agree nor Disagree
D) Disagree

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E) Strongly Disagree

If I fail a course, I will disappoint my friends.
   A) Strongly Agree
   B) Agree
   C) Neither Agree nor Disagree
   D) Disagree
   E) Strongly Disagree

If I fail a course, I will disappoint myself.
   F) Strongly Agree
   G) Agree
   H) Neither Agree nor Disagree
   I) Disagree
   J) Strongly Disagree

Privileges in the student home make me want to do well in school.
   A) Strongly Agree
   B) Agree
   C) Neither Agree nor Disagree
   D) Disagree
   E) Strongly Disagree

The thought of summer school makes me want to pass my classes.
   A) Strongly Agree
   B) Agree
   C) Neither Agree nor Disagree
   D) Disagree
   E) Strongly Disagree

I get better grades in classes I like.
   A) Strongly Agree
   B) Agree
   C) Neither Agree nor Disagree
   D) Disagree
   E) Strongly Disagree

I don't care about getting good grades in classes I don't like.
   A) Strongly Agree
   B) Agree
   C) Neither Agree nor Disagree
   D) Disagree
   E) Strongly Disagree
I believe I can get good grades in all my classes.
   A) Strongly Agree
   B) Agree
   C) Neither Agree nor Disagree
   D) Disagree
   E) Strongly Disagree

I'm not good at one or two school subjects.
   A) Strongly Agree
   B) Agree
   C) Neither Agree nor Disagree
   D) Disagree
   E) Strongly Disagree

If I get a poor grade it's because I'm not smart enough.
   A) Strongly Agree
   B) Agree
   C) Neither Agree nor Disagree
   D) Disagree
   E) Strongly Disagree

I am allowed to choose my school subjects.
   A) Strongly Agree
   B) Agree
   C) Neither Agree nor Disagree
   D) Disagree
   E) Strongly Disagree

I don't have any choice in which classes I take.
   A) Strongly Agree
   B) Agree
   C) Neither Agree nor Disagree
   D) Disagree
   E) Strongly Disagree

I have the ability to decide how to study.
   A) Strongly Agree
   B) Agree
   C) Neither Agree nor Disagree
   D) Disagree
   E) Strongly Disagree

I must complete school work the way my teacher tells me.
   A) Strongly Agree
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B) Agree  
C) Neither Agree nor Disagree  
D) Disagree  
E) Strongly Disagree

I can choose which assignments to do. 
A) Strongly Agree  
B) Agree  
C) Neither Agree nor Disagree  
D) Disagree  
E) Strongly Disagree

I am good at school work. 
A) Strongly Agree  
B) Agree  
C) Neither Agree nor Disagree  
D) Disagree  
E) Strongly Disagree

I am good at studying. 
A) Strongly Agree  
B) Agree  
C) Neither Agree nor Disagree  
D) Disagree  
E) Strongly Disagree

When I get good grades I feel good about myself. 
A) Strongly Agree  
B) Agree  
C) Neither Agree nor Disagree  
D) Disagree  
E) Strongly Disagree

When I get bad grades I feel bad about myself. 
A) Strongly Agree  
B) Agree  
C) Neither Agree nor Disagree  
D) Disagree  
E) Strongly Disagree

The grades I get now will determine what career I have. 
A) Strongly Agree  
B) Agree  
C) Neither Agree nor Disagree  
D) Disagree
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E) Strongly Disagree

School is important to me.
A) Strongly Agree
B) Agree
C) Neither Agree nor Disagree
D) Disagree
E) Strongly Disagree
**APPENDIX C**

**Needs Assessment Study Two Instrumentation (Quantitative)**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Some of the work we do in English is too hard for me.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Even if the work I do in English is hard, I can learn it.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If I have enough time, I can do even the hardest English classwork.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No matter how hard I try, there is some English classwork I'll never understand.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Understanding the work in English is more important than the grade I'll earn.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I would feel successful in English if I did better than other students.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If I can't do an assignment the first time, I keep trying until I can.</td>
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# APPENDIX D

## Needs Assessment Study Two Instrumentation (Quantitative)

### Pre-Test

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>What Grade do you hope to have at the end of 1st Marking Period?</td>
<td>________</td>
</tr>
<tr>
<td>Imagine yourself in the future. Everything has gone as well as it possibly could have. You have worked hard and got the grade you hoped to.</td>
<td></td>
</tr>
<tr>
<td>What have you done to get to this point?</td>
<td></td>
</tr>
<tr>
<td>Who has supported you?</td>
<td></td>
</tr>
<tr>
<td>What did you do to achieve that grade?</td>
<td></td>
</tr>
<tr>
<td>How do you feel?</td>
<td></td>
</tr>
</tbody>
</table>

### Post-Test

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>What Grade did you get this year?</td>
<td>________</td>
</tr>
<tr>
<td>Reflect upon the past year and that grade.</td>
<td></td>
</tr>
<tr>
<td>What have you done to get to this point?</td>
<td></td>
</tr>
<tr>
<td>Who has supported you?</td>
<td></td>
</tr>
</tbody>
</table>

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RELATE TO MOTIVATE

What did you do to achieve that grade?
________________________________________________________________________

How do you feel?
________________________________________________________________________
Hello, XX!

You previously expressed interest in my dissertation research for Johns Hopkins. My research project is ready to begin, and I wanted to reach out to see if you would like to participate. Here are some key details:

- The goal of the intervention is to help students develop non-cognitive skills that can help facilitate success after they graduate.
- The intervention takes place over 4 weeks.
- The total expected time commitment from you is no more than 2.5 hours.
- You will be assigned a caseload of no more than 10 randomly selected students.
  - These will be students you know.
  - You will read four short written responses from every student.
  - You will respond to each student by selecting response stems from a drop down menu and filling in any blanks.
- You will take two very brief surveys, one at the beginning and one at the end.
- You will watch a short online training video.
- Everything will be done online at your convenience.
- If you’d like, you can participate in an after school focus group to help me evaluate the effectiveness of the program. (This will last no longer than one hour.)
- Every week, one participating teacher will be randomly selected to receive a gift card.

Thank you so much for considering helping me out. If you have any questions, please email, call (x2817), or stop in to see me (N212). Your participation is voluntary, and I will not be upset if you cannot participate.

Please let me know by XX if you can participate.
Thanks again!
Natalie
Hi, XXX,

My name is Mrs. Duvall, and I teach English at MHS. I’m also going to graduate school at Johns Hopkins University. Part of my school work includes creating a research project to help MHS students plan for their future.

I’m writing to see if you would like to participate in my research project. This project will take four weeks, but only use up about two and a half hours of your time. In the project, you will take two surveys – one at the beginning and one at the end. You will also write one response every week to four different questions about your future. Some of you will get feedback from your teachers on what you wrote. All of your work will be done online at your convenience.

What do you get for participating? Well, my hope is that your responses and answers will help future students succeed. I also hope that you’ll find this exercise enjoyable and be better prepared for your own life after graduation. Additionally, every week four random students who participate will be selected to receive a Wal-Mart gift card.

Participating in the program is completely voluntary. It’s up to you to decide if you want to be in or not. I hope you will consider. If you are interested or have any questions, please reply to this email.

Mrs. Duvall
We want to tell you about a research study we are doing. A research study is a way to learn more about something. We would like to find out more about creating goals and planning to overcome obstacles that could get in the way of those goals. You are being asked to join the study because you are a student at Milton Hershey School. Our hope is that this will be helpful preparing you for college or a career.

If you agree to join this study, you will be asked to read an online testimonial from another student. After each testimonial, you will be given a prompt about your future and/or a potential obstacle to your goals. You will type a response that says how you would respond or act in the future. Once you are done, a teacher might read what you wrote and give you some feedback.

You should know that if you write about being harmed at any time, or seem to be planning to hurt yourself or others, your information will be shared with other adults in an effort to help you.

We hope that the study will help you as you plan to meet your goals after graduation. We may learn something that will help other children meet their goals, too. We hope that this study will help us improve this program for future use with other Milton Hershey students.

You do not have to join this study. It is up to you. You can say okay now and change your mind later. All you have to do is tell us you want to stop. No one will be mad at you if you don’t want to be in the study or if you join the study and change your mind later and stop.

Before you say yes or no to being in this study, we will answer any questions you have. If you join the study, you can ask questions at any time. Just tell the researcher, Mrs. Duvall, that you have a question.
RELATE TO MOTIVATE

If you want to be in this study, please sign your name. You will get a copy of this form to keep.

_________________________________________________________________________  __________________________________________________________________

**Sign your name here**  ______________________________  **Date**

APPENDIX H

**Intervention Pre and Post Test**

Self-Regulation Questionnaire

A. When I work on my homework, I do it because…

1. Because I want the teacher to think I’m a good student.
    Very true  Sort of true  Not very true  Not at all true

2. Because I’ll get in trouble if I don’t.
    Very true  Sort of true  Not very true  Not at all true

3. Because it’s fun.
    Very true  Sort of true  Not very true  Not at all true

4. Because I will feel bad about myself if I don’t do it.
    Very true  Sort of true  Not very true  Not at all true

5. Because I want to understand the subject.
    Very true  Sort of true  Not very true  Not at all true

6. Because that’s what I’m supposed to do.
    Very true  Sort of true  Not very true  Not at all true

7. Because I enjoy doing my homework.
    Very true  Sort of true  Not very true  Not at all true

8. Because it’s important to me to do my homework.
    Very true  Sort of true  Not very true  Not at all true

B. Why do I work on my classwork?

9. So that the teacher won’t yell at me.
    Very true  Sort of true  Not very true  Not at all true

10. Because I want the teacher to think I’m a good student.
    Very true  Sort of true  Not very true  Not at all true
RELATE TO MOTIVATE

11. Because I want to learn new things.
   Very true   Sort of true   Not very true   Not at all true

12. Because I’ll be ashamed of myself if it didn’t get done.
   Very true   Sort of true   Not very true   Not at all true

13. Because it’s fun.
   Very true   Sort of true   Not very true   Not at all true

14. Because that’s the rule.
   Very true   Sort of true   Not very true   Not at all true

15. Because I enjoy doing my classwork.
   Very true   Sort of true   Not very true   Not at all true

16. Because it’s important to me to work on my classwork.
   Very true   Sort of true   Not very true   Not at all true

C. Why do I try to answer hard questions in class?

17. Because I want the other students to think I’m smart.
   Very true   Sort of true   Not very true   Not at all true

18. Because I feel ashamed of myself when I don’t try.
   Very true   Sort of true   Not very true   Not at all true

   Very true   Sort of true   Not very true   Not at all true

20. Because that’s what I’m supposed to do.
   Very true   Sort of true   Not very true   Not at all true

21. To find out if I’m right or wrong.
   Very true   Sort of true   Not very true   Not at all true

22. Because it’s fun to answer hard questions.
   Very true   Sort of true   Not very true   Not at all true

23. Because it’s important to me to try to answer hard questions in class.
   Very true   Sort of true   Not very true   Not at all true

24. Because I want the teacher to say nice things about me.
   Very true   Sort of true   Not very true   Not at all true
RELATE TO MOTIVATE

D. Why do I try to do well in school?

25. Because that’s what I’m supposed to do.
   Very true       Sort of true       Not very true   Not at all true

26. So my teachers will think I’m a good student.
   Very true       Sort of true       Not very true   Not at all true

27. Because I enjoy doing my school work well.
   Very true       Sort of true       Not very true   Not at all true

28. Because I will get in trouble if I don’t do well.
   Very true       Sort of true       Not very true   Not at all true

29. Because I’ll feel really bad about myself if I don’t do well.
   Very true       Sort of true       Not very true   Not at all true

30. Because it’s important to me to try to do well in school.
   Very true       Sort of true       Not very true   Not at all true

31. Because I will feel really proud of myself if I do well.
   Very true       Sort of true       Not very true   Not at all true

32. Because I might get a reward if I do well.
   Very true       Sort of true       Not very true   Not at all true

Perceived Competence Scale (amended for this intervention)

For each of the following statements, please indicate how true it is for you, using the following scale:
1  2  3  4  5  6  7
Not at all somewhat very true true

33. I feel confident in my ability to manage college/a job after high school.
34. I am capable of learning the material in college or on the job.
35. I am able to achieve my future goals.
36. I feel able to meet the challenge of performing well in college or in my career.

Intrinsic Motivation Inventory (Post-Test)
For each of the following statements, please indicate how true it is for you, using the following scale:

1 2 3 4 5 6 7
Not at all true somewhat true very true

37. I believe that doing this activity could be of some value for me.
38. I believe I had some choice about doing this activity.
39. While I was doing this activity, I was thinking about how much I enjoyed it.
40. I believe that doing this activity is useful for helping achieve my goals.
41. This activity was fun to do.
42. I think this activity is important for my improvement.
43. I enjoyed doing this activity very much.
44. I really did not have a choice about doing this activity.
45. I did this activity because I wanted to.
46. I think this is an important activity.
47. I felt like I was enjoying the activity while I was doing it.
48. I thought this was a very boring activity.
49. It is possible that this activity could improve my college or career success.
50. I felt like I had no choice but to do this activity.
51. I thought this was a very interesting activity.
52. I am willing to do this activity again because I think it is somewhat useful.
53. I would describe this activity as very enjoyable.
54. I felt like I had to do this activity.
55. I believe doing this activity could be somewhat beneficial for me.
56. I did this activity because I had to.
57. I believe doing this activity could help me do better in college or at my job.
58. While doing this activity I felt like I had a choice.
59. I would describe this activity as very fun.
60. I felt like it was not my own choice to do this activity.
61. I would be willing to do this activity again because it has some value for me.
APPENDIX I

Perceptions of Students’ Future Orientations

For each of the following statements, please indicate how true it is for you, using the following scale:

1  2  3  4  5  6  7
Not at all true  somewhat true  very true

Students often think about their future goals.

Students have planned for their future.

Students believe that obstacles are a sign of failure.

Students have adequate skills for overcoming obstacles.

Students are aware of strategies they can use for overcoming obstacles.

Students have positive perceptions of their futures.

Students have negative perceptions of their futures.
APPENDIX J

Adult Survey Questions

There are no correct or incorrect answers. We are interested only in your frank opinions. Your responses will remain confidential.

INSTRUCTIONS: Please indicate your personal opinion about each statement by circling the appropriate response at the right of each statement.

KEY: 1=Strongly Agree 2=Moderately Agree 3=Agree slightly more than disagree 4=Disagree slightly more than agree 5=Moderately Disagree 6=Strongly Disagree

1. When a student does better than usually, many times it is because I exert a little extra effort.
2. The hours in my class have little influence on students compared to the influence of their home environment.
3. The amount a student can learn is primarily related to family background.
4. If students aren't disciplined at home, they aren't likely to accept any discipline.
5. I have enough training to deal with almost any learning problem.
6. When a student is having difficulty with an assignment, I am usually able to adjust it his/her level.
7. When a student gets a better grade than he/she usually gets, it is usually because I found better ways of teaching that student.
8. When I really try, I can get through to most difficult students.
9. A teacher is very limited in what he/she can achieve because a student's home is a large influence on his/her achievement.
10. Teachers are not a very powerful influence on student achievement when all factors are considered.
11. When the grades of my students improve, it is usually because I found more effective approaches.
12. If a student masters a new concept quickly, this might be because I knew the necessary steps in teaching that concept.
13. If parents would do more for their children, I could do more.
14. If a student did not remember information I gave in a previous lesson, I would know how to increase his/her retention in the next lesson.
15. The influences of a student’s home experiences can be overcome by good teaching.
16. If a student in my class becomes disruptive and noisy, I feel assured that I know some techniques to redirect him/her quickly.
17. Even a teacher with good teaching abilities may not reach many students.
18. If one of my students couldn't do a class assignment, I would be able to accurately assess whether the assignment was at the correct level of difficulty.
19. If I really try hard, I can get through to even the most difficult or unmotivated students.
20. When it comes right down to it, a teacher really can't do much because most of a
student's motivation and performance depends on his or her home
environment.
21. Some students need to be placed in slower groups so they are not subjected to
unrealistic expectations.
22. My teacher training program and/or experience has given me the necessary skills
to be an effective teacher
Dear XX,

Thank you for agreeing to participate in Relate to Motivate, or R2M. The program will begin on XX. This email lists the steps you need to complete.

1. By XX, watch the 15-minute orientation webcast found here – XXLink.
2. By XX, complete the 5-minute survey found here – XXLink.
3. When students have completed their prompts, you will receive an email alert. IMPORTANT – You will not be able to see student responses until you have completed steps 1 and 2.
4. Log in to Relate to Motivate.
   a. Your login information is
      Username: XX
      Password: XX
5. Read student responses and assign feedback.
6. Complete the very brief evaluation survey.
7. Let me know if you have any questions or encountered any problems.
8. Keep your eye on your email. One random teacher will receive a gift card for their participation.

Thank you so much for your help!
Natalie Duvall
X2817
duvalnn@mhs-pa.org

Dear XX,

Thank you for agreeing to participate in Relate to Motivate, or R2M. I hope you find the program makes you feel better prepared for your future. The program will begin on XX. This email lists the steps you need to complete.

1. By XX, watch the 15-minute orientation webcast found here – XXLink.
2. By XX, complete the survey found here – XXLink. This might take up to 30 minutes.
   IMPORTANT – You will not be able to continue until you have completed steps 1 and 2.
3. Log in to Relate to Motivate.
   a. Your login information is
      Username: XX
      Password: XX
RELATE TO MOTIVATE

4. Read the testimonial.
5. Read the prompt and write a response to it.
6. Complete the very brief evaluation survey.
7. Let me know if you have any questions or encountered any problems.
8. Keep your eye on your email. Four random students will receive a gift card for their participation.

Thank you so much for your help!
Mrs. Natalie Duvall
X2817
duvalln@mhs-pa.org

**Beginning Email -- Student**

Hello!

Thank you for completing your pre-research survey. We are now ready to begin!

1. Before you can do anything else, you must watch this 7-minute training video – (Link Redacted)
   a. Watch this video by Wednesday night if you can!
2. Keep your eyes open for an email from “Relate2Motivate.” That email contains your login and password for the software.
3. Once you have done steps 2 and 3, go ahead and answer your first prompt!
   a. The sooner you get this done the better, but please make sure you finish it by Sunday. You’ll get your next prompt on Monday.

Four students have been selected to receive Walmart Gift Cards. Those students will receive an email titled “R2M – You Won!”

Thank you, everyone, for your help.

Mrs. Duvall

**Email Prompt – Adult**

Dear XX,

Thank you for volunteering to participate in Relate to Motivate. I noticed you have not yet completed the following steps: XX, XX, XX, etc.

If you would no longer like to participate, that’s okay! Please just let me know so I can remove you from the study.
RELATE TO MOTIVATE

If you would like to participate, please complete the steps by XX. I’ve pasted the instructions below.

(Instructions redacted to save space in this appendix.)

Thank you so much for your time!
Natalie Duvall
X2817
duvalln@mhs-pa.org

Email Prompt – Student

Dear XX,

Thank you for volunteering to participate in Relate to Motivate. I noticed you have not yet completed the following steps: XX, XX, XX, etc.

If you would no longer like to participate, that’s okay! Please just let me know so I can remove you from the study.

If you would like to participate, please complete the steps by XX. I’ve pasted the instructions below.

(Instructions redacted to save space in this appendix.)

Thank you so much for your time!
Mrs. Natalie Duvall
X2817
duvalln@mhs-pa.org

Email Reminder -- Adult

Dear XX,

Welcome to Week XX of Relate to Motivate (R2M). Your participation has been very helpful! The program will begin on XX. This email lists the steps you need to complete.

1. When students have completed their prompts for this week, you will receive an email alert.
2. Log in to Relate to Motivate.
   a. Your login information is
      Username: XX
      Password: XX
3. Read student responses and assign feedback.
4. Complete the very brief evaluation survey.
RELATE TO MOTIVATE

5. WEEK 4 ONLY Please complete the completion survey.
6. Let me know if you have any questions or encountered any problems.
7. Keep your eye on your email. One random teacher will receive a gift card for their participation.

Thank you so much for your help!
Natalie Duvall
X2817
duvalln@mhs-pa.org

Email Reminder -- Student

Dear XX,

Welcome to Week XX of Relate to Motivate (R2M). Your participation has been very helpful! The program will begin on XX. This email lists the steps you need to complete.

1. Log in to Relate to Motivate.
   a. Your login information is
      Username: XX
      Password: XX
2. ONLY FOR GROUP T Read the feedback your teacher has left for you.
3. Continue to the next session and read the testimonial.
4. Read the prompt and write a response to it.
5. Complete the very brief evaluation survey.
6. WEEK 4 ONLY Please complete the completion survey. This might take up to 30 minutes.
7. Let me know if you have any questions or encountered any problems.
8. Keep your eye on your email. Four random students will receive a gift card for their participation.

Thank you so much for your help!
Mrs. Natalie Duvall
X2817
duvalln@mhs-pa.org

Gift Card Winner Email

Hi, XX!

Congratulations! You won the XX Wal-Mart gift card. Your gift card will be available for pick up on Friday, anytime between 7:30-3. Let me know if you need to get it another time. My room is SHN N212.

Thanks for participating in my research. 😊
Thank you so much for your participation in Relate to Motivate (R2M). I hope you feel good about your contribution to the program. This study has the potential to help current and future students at Milton Hershey, and I hope it helped you! You will have access to your responses for the remainder of the school year.

I am looking for volunteers to participate in a one-hour focus group after school next week. If you would like to volunteer, please let me know. Once I have volunteers, I will connect with you to schedule a good time. Because it will take place after school, snacks will be provided.

Finally, keep your eye on your email. One random teacher will receive a gift card for their participation.

Thank you so much for your help!
Mrs. Natalie Duvall
X2817
duvalln@mhs-pa.org

Thank you so much for your participation in Relate to Motivate (R2M). I hope you feel good about your contribution to the program. This study has the potential to help future students at Milton Hershey, and I hope it helped you! You will have access to your responses for the remainder of the school year.

I am looking for volunteers to participate in a one-hour focus group after school next week. If you would like to volunteer, please let me know. This is on a first-come, first-served basis. Because this will take place during the tutoring hour, an afterschool snack will be provided.

Finally, keep your eye on your email. Four random students will receive a gift card for their participation.

Thank you so much for your help!
Mrs. Natalie Duvall
X2817
RELATE TO MOTIVATE

duvalln@mhs-pa.org
RELATE TO MOTIVATE

APPENDIX L

Relate to Motivate Moderator’s Guide -- Adult
(Parts of the framework have been adapted from Healthier Worksite Initiative’s moderator’s guide
http://www.cdc.gov/nccdphp/dnpao/hwi/downloads/garden_market_focus_group_guide.pdf)

BACKGROUND/INTRODUCTIONS
Thank participants for agreeing to come.

- Thank you for volunteering to participate in this short focus group. As part of my research at Johns Hopkins University, I will be moderating our discussion today.

Explain guidelines and parameters of focus group.

- This group will last for one hour. We would like to use this time to get your feedback on the Relate to Motivate pilot/intervention as it relates to student participants and their involvement in the program.
- I am here simply to facilitate the session. I won’t be offended by any of your responses. Likewise, I won’t feel complimented by any of your opinions. I am looking to hear your honest feedback no matter what your opinion is. All feedback is valuable to the evaluation of the program and its effectiveness.
- My job is to help keep the group focused and fit within the allotted time. In order to address all questions, I might prompt the discussion to move along if we are spending too much time on any particular topic.

Address Confidentiality

- During discussion, please only refer to each other by your first names. When referring to students, please only use their first names.
- This session is being audio recorded to ensure I do not miss any comments. Even though first names are used, neither your name nor any student names will be attached to any comments in my dissertation report. You can be assured complete confidentiality.
- In my write up, identifying features of you and the school will be redacted.
- If at any time you feel like ending your participation in this group, you may leave. I will not be upset with you for doing so.

Participant Introduction

- Let’s begin by going around the room and stating your first name and your role at the school. We’ll start to my left.

DISCUSSION

- The purpose of our discussion today is to talk about the Relate to Motivate intervention that you participated in and your views on how well or not well students interacted with the program.
- Overall Impression of the Program
  - What did you think of the idea of students receiving written change-oriented feedback on their future plans?
RELATE TO MOTIVATE

- Do you feel the program was more positive or more negative?
- Do you feel the intervention helped students create strategies for the future? (PROBE: What types of strategies did you see students using?)
- Was the software design appropriate for facilitating this intervention?
- How would you rate the successfulness of the program?

- Student Responses
  - Do you think students responded thoughtfully to the prompts? (PROBE: Which prompts seemed to get the most thoughtful responses? Where there any responses you found particularly interesting?)
  - How do you feel students responded to your change-oriented feedback? (PROBE: Did any students follow up with you?)
  - Did you notice student response quality change over time? How so?
  - Did you notice students incorporating your early feedback into later responses?
  - Did you notice your students reflecting more on possible strategies as the prompts progressed?

CLOSING

Final Thoughts from Participants
- Are there any final comments that you would like to make before we end our session today?

Thank Participants
- Our time is now over. Thank you so much for participating in this pilot study and focus group. The information provided will help me evaluate the success of this program.
- After I review your responses, I will allow you to look over my notes to ensure you feel your responses adequately reflect your feelings.
- If you have any questions about today’s session, please contact me or my faculty adviser, whose email address is rmjohnbull@jhu.edu.
- Thank you!
BACKGROUND/INTRODUCTIONS

Thank participants for agreeing to come.

- Thank you for volunteering to participate in this short focus group. As part of my research at Johns Hopkins University, I will be moderating our discussion today.

Explain guidelines and parameters of focus group.

- This group will last for one hour. I would like to use this time to get your feedback on the Relate to Motivate pilot/intervention as it relates to your thoughts on the program.
- I am here simply to facilitate the session. I won’t be offended by any of your responses. Likewise, I won’t feel complimented by any of your opinions. I am looking to hear your honest feedback no matter what your opinion is. All feedback is valuable to the evaluation of the program and its effectiveness.
- My job is to help keep the group focused and fit within the allotted time. In order to address all questions, I might prompt the discussion to move along if we are spending too much time on any particular topic.

Address Confidentiality

- During discussion, please only refer to each other by your first names. You may refer to your teacher simply by saying “my teacher.”
- This session is being audio recorded to ensure I do not miss any comments. Even though first names are used, they will not be attached to any comments in my dissertation report. You can be assured complete confidentiality.
- Additionally, if you comment on any particular student or teacher, their names will be removed from my final report.
- In my write up, I will remove any information that can identify you or the school.
- No teachers or administrators at the school will know that you are the one who said your comments.
- However, please know that if you say anything during this session that indicates you have been harmed, are currently being harmed, or might harm yourself or others, I am required by law to report what you have said.
- If at any time you feel like ending your participation in this group, you may leave. I will not be upset with you for doing so.

Participant Introduction

- Let’s begin by going around the room and stating your first name and the grade you’re in. We’ll start to my left.

DISCUSSION
The purpose of our discussion today is to talk about the Relate to Motivate intervention that you participated in and your views on how well it worked for you.

Your Responses
- Did you respond thoughtfully to the prompts? (PROBE: Which prompts did you like best? Where there any prompts you found particularly interesting?)
- What did you think when you saw your teachers’ comments? (PROBE: Did their comments make you think about different things you could do in the future?)
- Did you feel more comfortable answering the prompts as the weeks passed? (PROBE: Did you change the way you responded?)
- Did you think about your teachers’ previous feedback when you answered the later prompts?

Overall Impression of the Program
- What did you think of the idea of receiving feedback on your future plans? (PROBE: Do you think other students would like to try the program?)
- Do you feel the program was more positive or more negative?
- Do you feel the program helped you create strategies for your future goals? (PROBE: What types of strategies did you come up with?)
- Did you like how the software was designed? (PROBE: What would you change about the software?)
- How would you rate the successfulness of the program?
- If you were in charge of the program, would you do anything differently?

CLOSING
Final Thoughts from Participants
- Are there any final comments that you would like to make before we end our session today?

Thank Participants
- Our time is now over. Thank you so much for participating in this pilot study and focus group. The information provided will help me evaluate the success of this program.
- After I review your responses, I will allow you to look over my notes to ensure you feel your responses adequately reflect your feelings.
- If you have any questions about today’s session, please contact me or my faculty adviser, whose email address is rmjohnbull@jhu.edu.
- Thank you!
Hello. Welcome to the R2M online tutorial. This screencast will explain the R2M program and what you need to do to complete it. You must watch this video before you log in to the software for the first time.

Let me begin by explaining why we’re doing this.

Research has shown that students who think about their future lives are better prepared and often have improved chances of success. We’re hoping that’s the case for you, too! To do that, you’re going to receive one prompt a week for four weeks. You’re going to read the prompt and write a response to it. For some of you, teachers will write responses to your answers. Each time you do this, you will be entered into a drawing for a Walmart gift card. Four students will be chosen each week.

Now, this is important. Your participation is voluntary. If at any time you want to stop, you may. You won’t be punished for stopping, and I won’t be upset with you. If you do choose to participate, please know that future Milton Hershey students and students from other schools might benefit because I will be able to create a software system that’s usable for them, too.

Don’t worry about other people reading your writing; only two adults will know what you, specifically, have written. Those adults are me and one other teacher. Otherwise, your participation is completely confidential.

I do have to let you know, though, if you say anything during this session that indicates you have been harmed, are currently being harmed, or might harm yourself or others, I am required by law to report what you have said.

Are you ready to take a look at the process now? Good! The first step is to go to XXwebsite and complete an online survey. This is how we will tell if the program works for you. This survey might take as long as 30 minutes, and you need to finish it in one sitting. Once that is complete, you will then access the software by going to XX website. Your login name is your email address. You will enter the password I email to you.

Once you log in, you will come to a control panel. It will list your available options. Begin by clicking on the student prompt that says “not started.” Read everything on this screen. After you have read the prompt, type the response in the box. You can either save this and finish it later, or you can save it and submit it.

Some of you will get feedback from a teacher. If you do, when you log in you will see that feedback is available. You will also get an email when this has happened. Make sure to read this feedback!

When you are done with each week’s prompt, you’ll be asked to take a brief three-question survey. This survey just helps me make sure that the program is working well for you.

After four weeks, you’ll be asked to take another survey that might take up to 30 minutes. If you forget any of this, don’t worry. I will send emails as we go along with reminder instructions. You can also review this video at any time. Additionally, you can access the transcript of this presentation.
If you have any questions at any time, you can email me or stop in to see me. My email address is duvalln@mhs-pa.org. My room is in Senior Hall North, on the second floor directly above the auto lab.

Thanks again for all your help, and I hope you enjoy the program!
Hello. Welcome to the R2M online tutorial. This screencast will prepare you for the program by explaining its purpose and walking you through the software system. You must complete this video before you log in to the software for the first time.

Let me begin by explaining the rationale for the intervention. Academic motivation is a bigger indication of student success than ability is. Because of that, it’s important that students feel academically motivated. The most fruitful forms of motivation are those that are internally regulated by the student. Edward Deci and Richard Ryan discuss this type of motivation in their theory, the Self-Determination Theory. They discovered that internally regulated motivation really helps students perform better. There are a few ways students can develop this kind of motivation. One is through change-oriented feedback.

Change-oriented feedback consists of telling someone that what they are doing is not quite correct and providing them with ways to improve. To ensure change-oriented feedback works, it needs to do a few things.

- It needs to provide explanations for why a change is needed.
- It needs to provide choices for action and be paired with tips.
- It needs to be done in a kind, and non-judgmental/shameful way.
- It needs to be done privately and in a timely manner.

Students involved in this intervention are working on thinking about their possible future selves. Students’ perceptions of future selves have the ability to drive students toward a hoped-for goal or away from a feared consequence. Unfortunately, research has shown that students of poverty sometimes have trouble creating workable visions of future selves. In order for this process to be effective for helping students be successful, they need to think about specific futures and create strategies for overcoming obstacles.

This is where your change-oriented feedback comes in. Students will respond to four prompts over the course of four weeks. When they submit their answers, you will follow three steps to provide change-oriented feedback. Don’t worry! You will select from a menu of pre-determined stems to ensure that you are providing the right type of feedback.

Let’s take a look at the software now. When students have completed a prompt, you will receive an email notification. You will then access the software by going to XXwebsite. Your login name is your email address. You will enter the password I email you.

Once you log in, you will come to a control panel. It will list your available options. Begin by clicking on “Student Responses.” Then you can click on each response to read. At the bottom you will see a drop down menu for your responses. Click these to select your stem and complete as appropriate. You can either save and finish later, or save and mark complete. You will then see that you have a pending survey to complete. You will see this at the end of every batch of responses. The survey consists of two questions that are the same each time. The purpose of these questions is to ensure that the software design and content was well-developed. And that’s it! This will happen four total times.
RELATE TO MOTIVATE

In addition to this, you will be asked to take a brief survey before the intervention and another brief survey at the end. I will send emails as we go along with reminder instructions. You can access this training at any time to review. Additionally, you can access the transcript of this presentation.

If you have any questions at any time, you can email me or stop in to see me. My email address is duvalln@mhs-pa.org. My room is in Senior Hall North, on the second floor directly above the auto lab.

Thanks again for all your help, and I hope you enjoy the program!
Intervention Software Page Scripts

Session 1

Welcome/Login Screen – Student and Adult
Welcome to R2M.
By logging in, you are consenting to be in this research study. Your participation is voluntary and you can stop at any time.

Testimonial – Student
Hi! I went through a similar program to R2M. Answering the prompt really helped me prepare for life after high school. I’m very glad I was able to participate in the program.
--Morgan

Prompt – Student T(reatment)
What is one obstacle that might prevent you from doing well at college, in the military, or at your first job? What are some ways you could overcome that obstacle?

Prompt – Student C(ontrol)
What are your plans for the future?

Response Selections – Adult
1. Select one response stem and complete it appropriately:
   a. Students at college often struggle when...
   b. It’s difficult being in the military when...
   c. Jobs can be difficult when...
2. Select one question stem and complete it appropriately:
   a. Have you ever thought about...?
   b. Would you consider...
   c. Did you know that...
3. Write a few sentences about a similar situation you were in and how you overcame it.

Thank You Screen – Student and Adult
Thank you for participating in this week’s R2M activity! Please take this brief survey and then exit the software.

Survey – Student
For each of the following statements, please indicate how true it is for you, using the following scale:
1 2 3 4 5 6 7
Not at all true   somewhat true   very true
RELATE TO MOTIVATE

1. The testimonial was interesting.
2. I understood the writing prompt.
3. I was able to respond to the prompt.

Survey – Adult
For each of the following statements, please indicate how true it is for you, using the following scale:

1 2 3 4 5 6 7
Not at all somewhat very true true

1. Student responses seemed to align with the purpose of the intervention
2. I was able to provide appropriate feedback to student responses

Session 2
The welcome, thank you, and survey screens are the same as Session 1.

Testimonial – Student
Hello! When I was 16 I answered a prompt like the one you’ll receive today. I thought it was helpful as I started to plan for my future career goals. – Alex

Prompt – Student T
Imagine you have just landed your ideal job. A week after you start, a friend or family member calls you and tells you that they need you to come home for a few days to help them move to a new apartment. Your boss needs you to work those days. What do you do?

Prompt – Student C
What do you expect your life to look like in 10 years?

Response Selections – Adult
1. Select one response stem and complete it appropriately:
   a. When starting a new job, it’s difficult to...
   b. Friends and family often don’t realize that...

2. Select one question stem and complete it appropriately:
   a. In addition to what you mentioned, have you thought about...?
   b. It’s important that you are aware of your job’s time off policy. You can find that out by...
   c. It is okay to tell your friend or family that you can’t make it home right away. You can help out by...

3. Write a few sentences about a similar situation you were in and how you overcame it.

Session 3
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The welcome, thank you, and survey screens are the same as Session 1.

Testimonial – Student
Hi, there! My name is Jomari and I just got a job at a company in Philadelphia. I really like what I do, and I think I will be successful here. When I was asked to write about my future like you are doing in this program, I was able to see how to work toward getting the job I have now.

Prompt – Student T
Think about your plans for after you graduate high school. This might be going college, joining the military, or getting a job. Imagine you’ve been doing one of those things for three months, and you’re afraid you won’t be able to finish. What has happened? What can you do to make sure you can stay and finish the year?

Prompt – Student C
What does success look like to you?

Response Selections – Adult
1. Select one response stem and complete it appropriately:
   a. College can be very difficult when...
   b. The military can be very difficult when...
   c. Jobs can be very difficult when...
2. Select one question stem and complete it appropriately:
   a. When something like this happens, it’s helpful to...
   b. When you are worried about not being able to achieve a goal, it’s important to...
3. Write a few sentences about a similar situation you were in and how you overcame it.

Session 4
The welcome, and survey screens are the same as Session 1.

Testimonial – Student
My name is Kyle and I did the same thing you are doing when I was in high school. Now that I’ve graduated and gotten a job doing what I’ve always wanted to do, I realize that answering prompts about my future helped me understand what life after high school would be like. I’m glad I was able to do it, and I’m glad you’re getting to do it now.

Prompt – Student T
What is the one thing that could absolutely stop you from achieving your career goal? Describe it in detail. What are you doing to prepare in case that one thing happens?

Prompt – Student C
What does failure look like to you?
Response Selections – Adult
1. Select one response stem and complete it appropriately:
   a. Sometimes problems can seem overwhelming and...
   b. It’s really tough to work hard when...
   c. It wouldn’t seem fair if...
2. Select one question stem and complete it appropriately:
   a. When challenges like this arise, it’s important to...
   b. You must always remember that...
   c. A great place to go for help is...
3. Write a few sentences about a similar situation you were in and how you overcame it.

Thank You Screen 1 – Student and Adult
Thank you for participating in R2M! Please take this brief survey and then proceed to the final step.

Thank You Screen 2 – Student and Adult
You are almost done! Your help has been greatly appreciated. Please take the post-survey and then exit the software. We hope you enjoyed your time with the program.
To code student prompt responses and teacher feedback, the author used both inductive codes based on research found in this dissertation’s literature reviews and deductive coding inspired by the reading of the participants’ responses. The specific approach to this is detailed below. As stated by Fereday and Muir-Cochrane (2006), even though code analysis is presented linearly, the process involved multiple iterations as well as researcher reflection. This analysis involved four such cycles.

Adapting Fereday and Muir-Cochrane’s inductive and deductive coding process with Saldaña’s descriptive coding plan (2015) to fit the needs and limitations of this study, the researcher developed the action plan seen in Figure 8.

**Figure 8**

*Inductive Coding Process*

Step One – Develop the Coding

As a basis for the analysis, four codes were created as an umbrella based on the prompts. Table 52 explains these four codes.

Table 52
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*Umbrella Codes for Qualitative Data*

<table>
<thead>
<tr>
<th>Code 1</th>
<th>Label</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Obstacles</td>
<td>Things (e.g. people, places, personal qualities) that have the potential to derail a goal or serve as a barrier or impediment to that goal.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code 2</th>
<th>Label</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strategies</td>
<td>Ideas, processes, or plans a person feels might negate, eliminate, or lessen an obstacle</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code 3</th>
<th>Label</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Positive Future</td>
<td>A vision or perception of one’s possible future self that is a happy and/or places the envisioner in a good situation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code 4</th>
<th>Label</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Negative Future</td>
<td>A vision or perception of one’s possible future self that is a unhappy and/or places the envisioner in a bad situation</td>
</tr>
</tbody>
</table>

**Step Two – Add Descriptive Codes as Summary**

After combing through student responses, several patterns emerged. Based on these, the author created additional codes. Table 53 identifies those. Because the control group had more general prompts, two codes were created for that group, to categorize the way in which those students responded to the prompts.

Table 53

*Descriptive Codes for Step Two of Coding Methodology*

<table>
<thead>
<tr>
<th>Code Label</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action Goals</td>
<td>Goals that are listed with steps or processes needed to achieve them. An example could be, “I plan to start at a community college, transfer to a four year school, and then intern while getting my degree in social work.”</td>
</tr>
<tr>
<td>Non-Action Goals</td>
<td>Goals that do not list steps or processes, such as “I want to go to my favorite college.”</td>
</tr>
<tr>
<td>Relationships</td>
<td>Mention of classmates, coaches, teachers, etc., helping or hindering.</td>
</tr>
<tr>
<td>Family</td>
<td>Mention of family helping or hindering.</td>
</tr>
</tbody>
</table>
## Unrealistic

Statements of things that are “pie in the sky” or unlikely to happen in a certain situation. Examples would be “After I get my first job I will pay for my family’s housing,” “If I don’t get accepted to medical school I will find another route to becoming a doctor.”

## Intrinsic

Statements that demonstrate internally motivated desires or action.

## Extrinsic

Statements that demonstrate externally motivated desires or action.

## Generic (Control Group Only)

Statements that lack detail or information.

## Specific (Control Group Only)

Statements that include details or information.

### Step Three – Identify Embedded Codes

On the third pass, several additional codes were created, which served as embedded codes (Saldaña, 2015) for obstacles and strategies, as shown in Table X.

<table>
<thead>
<tr>
<th>Embedded Code</th>
<th>Description or Example</th>
<th>Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generic</strong></td>
<td>● Not going to college could stop me</td>
<td>Both</td>
</tr>
<tr>
<td></td>
<td>● Do simple tasks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>● I would make the best of my opportunity</td>
<td></td>
</tr>
<tr>
<td>Money</td>
<td>● Could lose my scholarship</td>
<td></td>
</tr>
<tr>
<td>Friends</td>
<td>● I would reach out to close friends and get their opinions.</td>
<td></td>
</tr>
<tr>
<td>Family</td>
<td>● My family would hold me back.</td>
<td>Both</td>
</tr>
<tr>
<td></td>
<td>● I would ask other members of my family to help.</td>
<td></td>
</tr>
<tr>
<td>Religion</td>
<td>● I pray and call out to God for guidance</td>
<td>Strategy</td>
</tr>
<tr>
<td>Tragedy</td>
<td>● If I died</td>
<td>Obstacle</td>
</tr>
<tr>
<td></td>
<td>● Having a family member close to me pass away</td>
<td></td>
</tr>
<tr>
<td></td>
<td>● Death or something bad</td>
<td></td>
</tr>
<tr>
<td>Self</td>
<td>● I could get distracted</td>
<td>Both</td>
</tr>
<tr>
<td></td>
<td>● I had lost faith in myself</td>
<td></td>
</tr>
<tr>
<td></td>
<td>● I can take my time and do what I know first</td>
<td></td>
</tr>
<tr>
<td>Stress</td>
<td>● Stress</td>
<td>Obstacle</td>
</tr>
<tr>
<td>Non-Specific Strategies</td>
<td>● I will just have to manage my time better.</td>
<td>Strategies</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Not Appropriate Strategies</th>
<th>Specific Strategies</th>
<th>Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>• I will tell myself to stick it out.</td>
<td>• I will force myself to type it anyway.</td>
<td></td>
</tr>
<tr>
<td>• I could overcome that obstacle [procrastination] by doing the things I procrasinate [sic] on right away.</td>
<td>• I am just going to ignore them.</td>
<td></td>
</tr>
<tr>
<td>• I could overcome that obstacle [procrastination] by doing the things I procrasinate [sic] on right away.</td>
<td>• I would go and talk to my professors</td>
<td></td>
</tr>
<tr>
<td>Uncertain (Control Group Only)</td>
<td>Both</td>
<td></td>
</tr>
</tbody>
</table>

**Step Four – Identify and Validate Themes**

For this stage, the researcher checked to see if the embedded and deductive codes created during analysis matched with the initial four codes. They did, and thus became four themes. Additional themes were created from the deductive codes, such as internally and externally created obstacles.

**Step Five – Validate Findings**

To validate the codes the created and analyzed as a lone researcher, she consulted participants and also discussed coding strategies and thoughts with fellow researchers. (Saldaña, 2015). As one additional validation, the researcher worked reflectively through process, adapting and monitoring as she went.
APPENDIX R

Literature Review Methodology

In order to explore literature related to this dissertation, the author first conducted a keyword search of several databases supported by Johns Hopkins libraries, including Elsevier, JStor, and ProQuest. After that, the author did an iterative search of Google Scholar, using various search terms related to the constructs connected to this Problem of Practice. Though not an exhaustive list, following words and phrases were used singularly and then also mixed and matched in an effort to find a broad base of information: students of poverty, motivation, possible selves, future selves, Self-Determination Theory, feedback, teacher efficacy, mental contrasting, etc.

After reading a large quantity of articles on these topics, the author sifted through all article’s citations. By finding oft-cited works, the author then found these sources to use as additional seminal works. The author then continued to cross reference all databases with commonly used terms found in the articles.
RELATE TO MOTIVATE

BIOGRAPHICAL SKETCH

Natalie Duvall was born in Lebanon, Pennsylvania. Her collegiate career started at Saint Joseph’s University, where she majored in English and minored in fine and performing arts. After this, she received a master’s degree in writing popular fiction from Seton Hill University. She later returned to Seton Hill to receive a master of fine arts degree, also in writing popular fiction. In addition to this, she achieved a master’s degree in urban education from Alvernia University. Her career pursuits during the course of these degrees included time spent teaching English at a parochial school and a private, residential school serving students of social and economic need. Her work in the field includes time spent as department chair and new teacher mentor. During the course of her work at Johns Hopkins, she has presented several posters and papers related to her dissertation, as well as technology, policy, and creativity. In addition to her work in the field of education, Natalie has several publishing credits related to fiction writing, as well as having been the co-compiler of an Amazon best-selling charity anthology.

Curriculum Vitae

Education

EdD, Mind, Brain, and Teaching, Johns Hopkins University, expected August 2016

- Dissertation
  - “Relate to Motivate: Does teacher-provided change-oriented feedback facilitate workable perceptions of future selves and obstacle strategy development in students from backgrounds of poverty?”

- Selected Coursework
  - Research Methods I, II, and III
  - Multiple Perspectives on Learning and Teaching
  - Multicultural Education
  - Power, Politics, and Policy in Education
  - Literacy and Numeracy
  - Mind, Brain Science, and Learning
  - Neurobiology of Learning Differences
RELATE TO MOTIVATE

**MEd**, Urban Education, Alvernia University, May 2015
- **Selected Coursework**
  - Curriculum Design
  - Literacy Learning
  - Language and Literacy
  - School Law and Social Advocacy
  - Teaching Strategies of Secondary English
  - Moral Leadership
  - Organizational and Professional Ethics
  - Research Methods

**MFA**, Writing Popular Fiction, Seton Hill University, January 2011
- **Thesis** – *His Mistress*
  - 100,000 word Regency-set historical novel.
- **Selected Coursework**
  - Teaching Popular Fiction and Writing
  - Readings in the Genre (Three Courses),
  - Writing About Popular Fiction
  - Advanced Reading Seminar: The Writer’s Life
  - Mood and Atmosphere in Horror

**Teaching Certification**, Secondary English, Alvernia University, 2009

**MA**, Writing Popular Fiction, Seton Hill University, 2004
- **Thesis** -- *O’Feurstein’s Education*
  - 60,000 word contemporary women’s fiction novel.
- **Selected Coursework**
  - Showing, Telling and Style
  - Research for Writing
  - Writing for Teens Who Don’t Want to Read
  - Marketing Romance and Recent Trends
  - The Novel: Structure, Synopsis and Writing Tools
  - The Business of Writing

**BA**, English with a Minor in Fine and Performing Arts, Saint Joseph’s University, 2002

**Honors and Awards**
- School of Education Scholarship, Johns Hopkins University, 2013-2016
- Speak Up! Writing Contest Winner, *Fine Living Lancaster Magazine*, 2010
- Scholar’s Discount Recipient, Seton Hill University, 2009-2011 and 2002-2004
- AlphaSmart Writing Contest Winner, 2004
- Dean’s List, St. Joseph’s University, 2001-2002

**Experience**
Teaching Assistant, Johns Hopkins University, Spring 2015 – Summer 2016
- Served as a teaching assistant for the following doctoral courses:
  - Research Methods I (Two Sections)
  - Research Methods II
  - Leadership of Educational Organizations (Two Sections)
  - Multicultural Education (Two Sections)
- Among first student teaching assistants to serve in the Johns Hopkins University EdD program
- Assisted in all aspects of coursework, including but not limited to, grading, designing supplemental workshops, advising, mentoring, and design of the learning management system.

- Mentored and assisted new teacher. Performed observations and provided feedback. Guided teacher on assimilating into the school culture, working with students from backgrounds of poverty, and creating lesson plans, among other things.

English Department Head, School Name Redacted, 2010 – 2014
- Oversaw 13-person high school department. Coordinated remediation programs and senior high curriculum in conjunction with curriculum supervisor. Helped implement Content Area Reading (CAR) program.

Content Area Reading (CAR) Teacher, School Name Redacted, 2009 – Present
- Teach reading strategies through literature and non-fiction. Facilitate rapid reading growth in students two or more grades behind grade reading level.

English Teacher, School Name Redacted, 2008 – Present
- Teach American and British literature. Achieved 100% Common Core proficiency rate for the past two years. Created and developed curriculum. Designed supplemental remedial activities. Became first in department to go paperless in the classroom. Served as SGA adviser. Hosted NaNoWriMo.

English Teacher, Lebanon Catholic School, Lebanon PA, 2005 – 2008
- Taught world and British literature and AP literature and composition. Instructed courses in poetry, theater and speech. Taught remedial reading. Served as yearbook and SADD adviser.

Fiction and Non-Fiction Writing Credits
- Article, “Regencies and the modern girl,” The Popular Romance Project, December 2013
- Short Story, “Youth,” Eye Contact Literary Magazine, Spring 2013
- Guest Blogger, Various Craft of Writing Websites, 2010 – Present
RELATE TO MOTIVATE

  - Anthology placed #1 in the Amazon Bestsellers rankings.

**Academic Publications**

**Conference Papers and Posters**


**Conference Teaching Experience – Craft of Writing**
“Writing Every Day When You Don’t Want To,” Seton Hill University’s In Your Write Mind Conference
“Writing Every Day,” Seton Hill University’s In Your Write Mind Conference
“Quintessential: A case for Julia Quinn’s *The Secret Diaries of Miss Miranda Cheever* as a classic romance novel,” Seton Hill University
“Writing Action Scenes the WWE Way” (with Matt Duvall), New Jersey Romance Writers Conference and Future, Fantasy and Paranormal Romance Writers of America
“Word Choice Workout,” Seton Hill University’s In Your Write Mind Conference and Future, Fantasy and Paranormal Romance Writers of America
“Writing Sex and Sexual Tension,” Lowcountry Romance Writers of America
“Writing Drugs, Alcohol and Tobacco,” Central Pennsylvania Chapter of Romance Writers of America

**Professional Development Teaching Experience – Reading and Literature**
- “Vocabulary in the Content Areas”
- “Teaching and Assessing Nonfiction Reading”
- “Identifying Theme in Six Steps”
- “Active Engagement in English/Language Arts”
- “Going Paperless: Using Technology in the Classroom”

**Activities and Accomplishments**
- **Chair**, Teacher Evaluation and Coaching Paper Presentation, NERA Conference, 2015
- **Steering Committee Member**, Johns Hopkins University School of Education Student Organization, 2015 – Present
- **Mentor/Mentor Liaison**, Johns Hopkins University EdD Program, 2014 – Present
- **Student Advisory Board Member**, Johns Hopkins University, 2013 – Present
- **Course Development Consultant** (Contemporary Approaches to Education), Johns Hopkins University EdD Program, 2015

**Professional Memberships**
- National Association of Multicultural Education, 2016 – Present
- Northeastern Educational Research Association, 2014 – Present
- Romance Writers of America, 2003 – Present
- Beau Monde Chapter, Romance Writers of America, 2009 – Present
- Pennwriters, 2008 – 2010
- National Education Association, 2008 – Present
- Pennsylvania Education Association, 2008 – Present