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The Role of Hope among College Students' Academic Achievement

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Seattle Pacific University

The Role of Hope among College Students' Academic Achievement

by

ESTHER C. PENZAR

A dissertation submitted in partial fulfillment

Of the requirements for the degree of

Doctor of Education

Seattle Pacific University

April 2019

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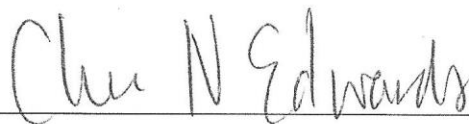
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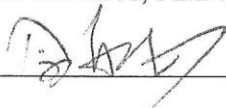
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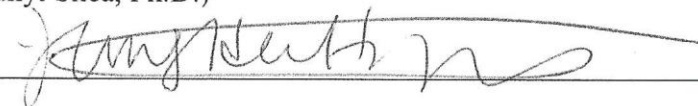
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Abstract

First-generation college students historically face barriers to succeed academically in post-secondary education as observed through lower graduation rates, lower GPA, lower rates of persistence in college, and prolonged time to graduate compared to non-FGCS (Cataldi, Bennett, & Chen, 2018; Chen & Carroll, 2005; Ishitani, 2006). Internal factors such as hope, and academic self-efficacy have shown to have a distinct and significant impact on academic achievement (Feldman & Kubota, 2015).

In the present research, the relationships between Snyder and colleagues (1991) Trait Hope Scale (THS), Chemers and colleagues' (2011) Academic Self-Efficacy Scale (ASES) and academic achievement, as measured by self-reported GPA, were investigated. Group level differences were analyzed based on demographic variables (ethnicity, college-going status, and gender). The findings revealed that FGCS participants had significantly lower hope, $t(312) = -2.72, p = .008$, academic achievement, $t(311) = -4.31, p < .001$, and academic self-efficacy, $t(312) = -3.74, p < .001$, compared to non-FGCS. An ANOVA multi-group comparison indicated male participants significantly lower academic self-efficacy compared to female participants, $F(4, 311) = 6.41, p < .001$.

Within the THS subscales, agency and pathways, agency (standardized $\beta = .42$) more strongly predicted academic achievement than pathways (standardized $\beta = -.23$). A mediation analysis revealed academic self-efficacy mediated agency and academic achievement, $b = .09, [BC] 95\% CI [.05, .12]$. Academic self-efficacy was an overall better predictor of achievement than hope, and more strongly correlated to GPA ($r = .45, p < .001$) than hope ($r = .17, p = .001$). Findings from the present study suggest that

agency and academic specific support may increase academic achievement more than through general hope.

Chapter One

Introduction

Researchers and practitioners in education continue to search for factors that contribute to student academic achievement (Gallagher, Marques, & Lopez, 2017). Educational factors such as intelligence, prior academic achievement, and standardized test scores have historically been used to predict academic achievement, but psychological factors have been more recognized in recent years as stronger indicators to academic achievement (Snyder, Lopez, Shorey, Rand, & Feldman, 2003).

Positive psychology was created as a response to the rise of mental health issues after World War II, where the focus of psychology moved from a disease model to a strengths-based model of understanding mental illness (Snyder & Lopez, 2005). Martin Seligman, a major figure in the field, describes positive psychology at the individual level as the positive subjective experience of wellbeing, satisfaction, flow, joy, happiness, and constructive cognitions about the future (optimism, hope, and faith). He stated,

Psychology is not just the study of disease, weakness, and damage; it also is the study of strength and virtue. Treatment is not just fixing what is wrong; it also is building what is right. Psychology is not just about illness or health; it also is about work, education, insight, love, growth, and play (Snyder & Lopez, 2005, p. 4).

The emphasis of prevention is prevalent within positive psychology and builds upon individuals' strengths to prevent mental illness rather than remediating the broken. Since the inception of positive psychology, much research has been dedicated towards this new model and perspective on mental health.

Hope theory arose from the field of positive psychology formally through the work of Snyder et al. in 1991. Hope theory was created under the notion that individuals are goal-oriented and hold internal goal-directed cognitions and motivations to meet those goals (Snyder & Lopez, 2005). The goal-oriented thoughts also include the perceived success or failure of the goal and the emotions that result from the goal attainment process. The positive effects of hope have been studied over the past decades in relation to psychological well-being, academic achievement, benefit finding within stress research (Gilman, Dooley, & Florell, 2006; Snyder et al., 2003). For the purposes of this paper, the unique attributes of hope as a cognitive-motivation system was examined alongside a related factor (academic self-efficacy), to distinguish the impact of hope among first-generation college students (FGCS), and non-first-generation college students (non-FGCS) academic achievement.

First-Generation College Students

First-generation college student (FGCS) is defined as a student whose parents' highest level of education is a high school diploma or less and often face multiple barriers succeeding in post-secondary settings (Blackwell & Pinder, 2004). FGCS background, precollege factors, and college factors contribute to difficulties in academic success in college. FGCS are historically from disadvantaged groups: ethnically non-white and from low socioeconomic backgrounds, which are linked to attrition in college and prolonged time to degree completion (Ishitani, 2006). Students' ethnicity has been shown to significantly impact degree attainment for undergraduate students (Chen & Carroll, 2005; Ishitani, 2006). Ishitani (2006) found among FGCS, Hispanic students were less likely to graduate within four years of college compared to Caucasian students, and African

American students were the least likely to graduate within four years than Hispanic or Caucasian students.

Students socioeconomic backgrounds are positively correlated with graduation rates in high school and college (Ishitani, 2006; McDonough, 2004). McDonough (2004) found that 50% of high school graduates came from families making less than \$50,000 per year, compared to 16% of high school graduates who came from families making less than \$20,000 per year. This finding suggests that as household income increases, high school graduation rates increase.

Similar findings are reflected among college students; family income is also linked to the time it takes to graduate from college (Ishitani, 2006). Students whose family income is \$50,000 or higher are more likely to graduate in any period than are students from lower income families. Students with lower family income are less likely to graduate within four to six years compared to students with higher family income. In addition, students from the lowest income group were 2.3 times more likely to depart in the first year of college than students from the highest income group (Ishitani, 2006). FGCS are more likely to come from families and ethnic groups associated with risk of departure, and as a result face challenges in successfully completing a college degree compared to non-FGCS (Chen & Carroll, 2005; Ishitani, 2006).

Not only do FGCS background characteristics decrease persistence and timely graduation, but FGCS's pre-college characteristics also exasperate the unfavorable academic outcomes. Ishitani (2006) found student persistence and timely graduation rates were mediated by precollege characteristics such as high school academic attributes (rigorous coursework and high-class rank in high school), however, research showed that

FGCS often took fewer higher-level classes in high school and performed worse on academic placement tests (Cataldi, Bennett, & Chen, 2018; Chen & Carroll, 2005).

FGCS are underprepared academically to succeed in college and lack cultural capital to effectively navigate college (Ishitani, 2006; McDonough, 1997). McDonough (1997) defines cultural capital as the privileges and attitudes that families in higher socioeconomic brackets transmit to their children to preserve their economic status. Within the educational context, cultural capital around college-going attitudes would be encouraged as a means towards maintaining socioeconomic status (McDonough, 1997). FGCS have less family resources in terms of their experiences and values to successfully access college education compared to students with highly educated parents (Martinez, 2003; Padgett, Johnson & Pascarella, 2012). Cultural capital is believed to influence college-educated parents to extend values around education to their children (McDonough, 1997; Padgett et al., 2012).

FGCS are less prepared in terms of academic readiness and cultural capital based on pre-college factors described above (Ishitani, 2006; McDonough, 2004; Padgett et al., 2012). The lack of academic preparedness is demonstrated through FGCS lower grades in college, lower rates of continuous enrollment, fewer credits enrolled, lower rates of persistence in college, and longer time to graduate compared to non-FGCS (Cataldi et al., 2018; Chen & Carroll, 2005; Ishitani, 2006). Based on the risk factors of FGCS to be unsuccessful in college, this study explored the role of hope among college students' academic achievement.

The Hope Factor

Past research by Day, Hanson, Maltby, Proctor, and Wood (2010) and Gallagher et al. (2017) shed light on the power of individuals' internal factors. The findings indicate that student's thoughts and beliefs about the future informs academic achievement and life outlooks above and beyond the traditional predictors of academic achievement. Educational factors such as intelligence, prior grades, and SAT/ACT scores are typically used to predict academic achievement, but psychological internal factors have shown to serve as stronger indicators of academic achievement (Day et al., 2010; Snyder et al., 2003).

Individual internal factors such as personality, hope, motivational constructs (self-efficacy and optimism), divergent thinking and engagement have all shown positive correlations with academic achievement (Day et al., 2010; Gallagher et al., 2017). Among the correlated factors, hope demonstrates a distinct and significant impact on academic achievement when other internal factors such as optimism, self-efficacy, personality, intelligence, and engagement are controlled for (Day et al., 2010; Feldman & Kubota, 2015). Even among these internal factors that are positively associated with academic achievement, hope stands out as a significant contributor to academic success (Day et al., 2010; Feldman & Kubota, 2015; Gallagher et al., 2017).

Studies suggest that hope uniquely contributes to academic achievement more than related educational factors and positive psychological factors. A study by Day et al. (2010) demonstrated that the relationship between hope and achievement was not due to a third variable, but hope was responsible for achievement. Specifically, the study indicated hope predicted academic achievement more than educational history, personality, intelligence, and engagement (Day et al., 2010). Similarly, Feldman and

Kubota (2015) found hope's unique ability to predict grade point average (GPA) that motivational constructs optimism and self-efficacy could not. The distinguishing aspects of hope attributed to the impact in academic achievement from other internal factors are described below (Feldman & Kubota, 2015; Snyder et al., 1991).

Hope, as a cognitive-motivational system of individual's goal-oriented thoughts and feelings about the future, was introduced by Snyder and colleagues in 1991. Snyder et al. (1991) describe hope as a reciprocal system dependent on the successful exchange between agency (goal-directed determination) and pathways (planning of ways to meet goals). Hope is more than a simple goal-directed pursuit but is rather a cognitive-motivational system that is directed towards goal attainment. Snyder noted that, "Goals themselves do not produce behavior, but rather, people's views of themselves as being agents capable initiating (agency) and implementing (pathways) actions to pursue valued personal goals (i.e., going to college) produce the helpless or mastery-oriented responses" (Snyder et al., 2002b, p. 821). Hope theory attributes goal-directed behavior to underlying beliefs about oneself (agency and pathways as a prerequisite to motivation in goal attainment (Snyder et al., 2002b).

Since the inception of hope theory (Snyder et al., 1991; Snyder & Lopez; 2005), this cognitive-motivational system has been associated with positive academic performance in school. Research studies by Gallagher et al. (2017), Gilman et al. (2006), and Snyder et al. (2002b) demonstrate that high-hope is positively correlated with positive psychological factors and academic achievement as shown through achievement tests, high college and high school GPA and high graduation rates. Students with high-hope have higher achievements in academic areas when controlled for intelligence, prior

grades, self-esteem and exam scores (Day et al., 2010; Snyder et al., 2003). High-hope students also have higher cumulative GPAs, increased likelihood of graduating, and lower likelihood of dropping out (Snyder et al., 2002b).

A recent study by Gallagher, Marques, and Lopez (2017) demonstrated hope's unique ability to predict academic achievement and retention in college students, beyond that of other factors like self-efficacy, engagement, and education history. Academic hope predicted the number of semesters enrolled, the retention rate for the second semester of college, and the four-year graduation rates and overall cumulative GPA. Academic hope significantly predicted GPA ($b = .21$, $SE = .04$, $p < .01$), while academic self-efficacy did not significantly predict GPA. The unique role of hope in academic achievement among other individual internal factors has been evident through prior research.

Self-Efficacy

Self-efficacy and hope are considered cognitive-focused approaches within positive psychology and share similarities and yet remain distinct. Self-efficacy was introduced by Albert Bandura (1977) as an individual's belief in themselves that they can accomplish what they set their minds on. Self-efficacy is rooted in social cognitive theory, which views individuals as active shapers of their environment that is developed through self-reflection of one's place and role within one's social environment (Bandura, 1977; Snyder & Lopez, 2005).

Hope theory, on the other hand, emphasizes the individuals' belief that they will initiate and continue to pursue their goals, while self-efficacy evaluates if they can meet the goal in a specific context (Bandura, 1977; Snyder et al., 1991; Snyder & Lopez,

2005). In other words, hope captures the will and self-efficacy captures the capacity. In addition, hope explains emotions that result from goal-directed thought, but self-efficacy does not address emotions within the theory (Snyder & Lopez, 2005).

Self-efficacy is defined as individuals' beliefs about their ability to coordinate skills and abilities to attain their desired goals within domains and circumstances (Snyder & Lopez, 2005). Self-efficacy is not a skill or generalized trait but is a cognitive process that develops over a lifetime based on individual experiences and evaluations of those experiences (Snyder & Lopez, 2005). General measures of self-efficacy have not proven to be useful compared to specific self-efficacy measures in domains. Therefore, to capture the specific purpose of this study, Chemers, Hu and Garcia's Academic Self-Efficacy Scale (ASES) (2001) was used to understand the role of the participants' confidence in academic achievement in comparison to general hope as a predictor of academic achievement.

Statement of the Problem and Purpose

Numerous studies described above, by researchers Day et al. (2010), Feldman and Kubota (2015), and Gallagher et al. (2017) have examined the relationship between hope and academic achievement as measured by students' GPA for undergraduate college students. High hope has predicted academic achievement and retention in college students, beyond that of other factors, student background characteristics or pre-college factors (Gallagher et al., 2017). Academic hope predicted the number of semesters enrolled, the retention rate for the second semester of college, and the four-year graduation rates and overall cumulative GPA. The positive links between hope and cumulative GPAs, graduation rates, and reduced risk of dropping out make hope a strong

potential moderator for FGCS who are at-risk of failure in post-secondary education settings (Snyder et al., 2002b).

The literature has yet to examine hope within FGCS and the purpose of the study is to investigate the role of hope among FGCS academic achievement through a comparison study with non-FGCS. The relationship between hope and academic achievement (self-reported cumulative GPA) is examined with academic self-efficacy to understand the role of hope among FGCS and non-FGCS academic achievement.

Glossary of Terms

Hope Theory – Hope theory proposes that a hopeful person can set goals and can see multiple pathways to accomplish those goals and will be motivated to use those pathways in the fulfillment of those goals (Snyder & Lopez, 2005).

Agency – Agency is the individual's overall perception of successful determination in meeting goals (Snyder, et al., 1991).

Pathways – Pathways is the individual's sense of being able to generate successful plans to achieve the set goals (Snyder, et al., 1991).

Self-Efficacy – Self-Efficacy is an individuals' ability to coordinate skills and abilities to attain desired goals domains and circumstances (Bandura, 1977; Snyder & Lopez, 2005).

Academic Self-Efficacy – Academic Self-Efficacy specifically addresses an individual's confidence in their ability to perform well academically (Chemers et al., 2001).

First-Generation College Student – Students whose parent(s)' highest level of education is a high school diploma or less, therefore are often the first in their family to attend college (Blackwell & Pinder, 2004; Nunez & Cuccaro-Alamin, 1998).

Non-First-Generation College Student – Students whose parent(s) have attained a bachelor's or an advanced degree (Nunez & Cuccaro-Alamin, 1998).

Cultural Capital – Cultural Capital is referred to the privileges and attitudes that families in higher socioeconomic brackets transmit to their children to preserve their socioeconomic status (McDonough, 1997).

Research Questions

1. What are the correlations between trait hope, academic self-efficacy and academic achievement as reflected in their self-reported GPA among college student?
2. Which factor - agency or pathway - of trait hope, as measured by the agency subscale and the pathways subscale, would be a stronger predictor of academic achievement among college students, as measured by their self-reported GPA?
3. Does academic self-efficacy mediate the relationship between agency and academic achievement?

Chapter Two

Review of Literature

Hope uniquely and positively contributes in areas of academic achievement (Gallagher et al., 2017; Snyder et al., 2002b) and psychological well-being (Gilman et al., 2006; Snyder et al., 2003). Students with high-hope have higher achievements in academic areas when controlled for other correlated indicators (Snyder et al., 2003). Chapter two will begin with an overview of hope theory, existing measures, and empirical research on hope. Previous research on hope in relation to academic achievement will be discussed. Finally, FGCS will be presented towards the end of the chapter. The primary goal of this research study is to examine the role of hope among FGCS and non-FGCS academic achievement.

Hope Theory

Hope theory is a cognitive-motivational system that allows for a comprehensive overview of goal pursuits (Snyder et al., 1991). Hope theory reflects the individual's perception of capability through three major components: a clearly conceptualized goal, strategies to reach the goal (pathways thinking), and motivation to use the strategies to obtain the goal (agency thinking) (Snyder & Lopez; 2005). Hope theorists define a goal as anything an individual desires to experience, create, obtain or become (Snyder et al., 2003). The formation of the goal provides steps that are necessary to achieve the desired goal, and the motivation fuels the pursuit of the goal (pathways thinking) (Snyder et al., 2002b). Marques, Gallagher and Lopez (2017) emphasize hope not only as a goal-directed cognitive process, but also as a reflective practice involving individual's beliefs about their ability to effectively undergo the goal-directed cognitive steps (agency

thinking). The three components of hope theory, a clearly conceptualized goal, pathways thinking, and agency thinking, create the cognitive-motivational system as described in the figure 1 below (Snyder et al., 2002b).

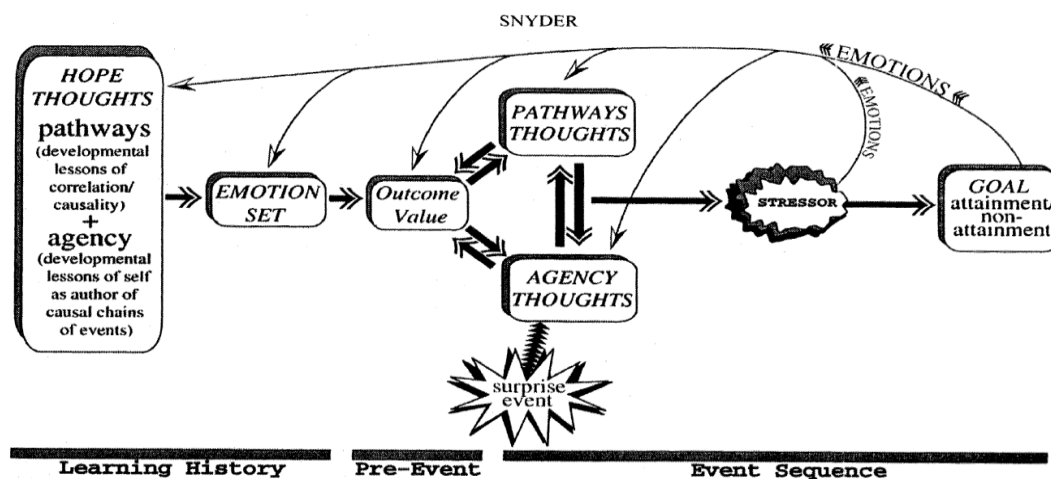


Figure 1. Hope theory agency and pathway schematic of feed-forward and feedback functions involving agency and pathway goal-directed thoughts in hope theory.

Pathways thinking (see Figure 1) assumes anticipation of the future shapes current goal-directed thoughts, as well as future experiences (Snyder et al., 2002b). As a result, individuals create routes to attain goals by predicting events and the action steps necessary to meet the desired goals. Individual's perception of previous experiences of successful or unsuccessful goal pursuits contribute to the overall belief in their ability to accomplish goals. Hope and goal attainment are reciprocal in nature in that the level of hopefulness on a goal is adjusted based on the relative success or failure of achieving the desired goal (Feldman, Rand, & Kahle-Wroblewski, 2009). The beliefs then lead to emotions related to goal outcomes; positive emotions result from perceptions of successful goal pursuit and negative emotions result from perceptions of unsuccessful goal pursuit (Snyder et al., 2002b). The underlying thoughts and emotions associated

with goal pursuit determine the level of hopeful thoughts and future goal pursuits (Feldman et al., 2009).

The value placed on the goal outcome and previous experiences of goal pursuit determine hopeful thoughts, which influence emotions (Snyder, Feldman, Shorey, & Rand, 2002a). Barriers to goal attainment create stressors and influence emotions regarding goal attainment in both pathways and agency thinking (Snyder et al., 2002a). High-hope individuals overcome barriers by using effective strategies to meet their goals and persist in the motivation to attain their goals because of their previous successful experiences with goal attainment (Snyder & Lopez, 2005). Conversely, an individual with low-hope has weak pathways and agency thoughts. Therefore, they lack the ability to seek alternative paths and use counterproductive strategies to combat stressors (Snyder et al., 2002a).

Hope Measures

Hope theory and measures were established by Snyder and colleagues in 1991 as a goal-oriented cognitive process in which individual's perceptions of their ability to successfully attain goals through agency (goal-directed determination) and pathways (creating multiple ways to meet desired goal) are captured (Snyder, et al., 1991). Four distinct hope measures encapsulate the varying capacities of hope: trait/global hope, domain-specific hope, goal-specific hope, and state hope.

Trait (global) hope is defined by Snyder, et al. (2002a) as "individual's overall evaluation of their ability to construct sufficient pathways and generate the agency thoughts necessary to achieve goals is known as global or trait hope" (p. 300). Trait hope focuses on one's overall belief in their ability to achieve goals, rather than specific areas

of goal attainment. Therefore, actual effective use of agency and pathways may differ from an individual's perceptions of their ability to effectively identify pathways and utilize agency. Both the adult version of Snyder's Trait Hope Scale (THS) (1991) and the children's version of the hope scale have been developed to measure individual's stable global hope (Snyder et al., 1997).

The THS (Snyder et al., 1991) demonstrates sound psychometric properties as shown in previous research by Day, et al. (2010), Feldman et al. (2009), and Marques et al. (2017). The Cronbach's alphas ranged from .74 to .84 (Snyder et al., 1991); the agency subscale Cronbach's alphas ranged from .71 to .76; the pathways subscale Cronbach's alphas ranged from .63 to .80, which all fall within the acceptable range (Vogt & Johnson, 2011). A strength of the THS is the clear reporting of the scale's psychometrics (Snyder et al., 1991).

Trait hope is believed to inform individual's overall hopefulness in their lives, however, domain-specific variance in hope may exist. In response, Sympson and Snyder (1997) created a Domain-Specific Hope Scale (DSHS) for adults and youth as it relates to hope levels in six life domains: social relationships, romantic relationships, family life, academics, work, and leisure. The purpose of the DSHS (Sympson & Snyder, 1997) is to explain the gap for individuals who may have high overall global hope but report low-hope in a specific domain. Goal-Specific Hope Scale (GSHS) (Feldman, Rand, Kahle & Snyder, 2001) analyzes specific goal pursuits within a distinct life domain.

It is important to note a weakness in the DSHS, namely that Sympson and Snyder's original DSHS (1997) was an unpublished manuscript that was unable to be

found. A study that followed two years later sought to validate the DSHS was an unpublished doctoral dissertation only referenced by other articles (Sympson, 1999).

Robinson and Rose (2010) conducted a study to test the predictive, construct, and convergent validity of trait and domain-specific measures of hope for college student academic achievement. The results indicate that domain-specific measures of hope yielded scores that were reliable, factorially distinct, and more predictive of academic achievement than the THS (Snyder et al., 1991). However, the convergent and predictive validity were not reported in the study (Robinson & Rose, 2010).

Finally, the State Hope Scale (SHS) was developed to measure individuals' current moment level of hope based on ongoing changes in life events and emotional states (Snyder et al., 1996). The validity and reliability of the SHS were based on four research studies outlined by Snyder et al. (1996), however, the many aspects of the study were unclear. The author did not specify if the four studies discussed in his paper were his research studies or if they were studies by others. The studies were also limited to college student participants and did not specify where they took place. The lack of information and the narrow population included in the studies reduces the generalizability of the SHS (Snyder et al., 1996).

In summary, the four hope measures (trait/global hope scale, domain-specific hope, goal-specific hope, and state hope) are unique in their capacity to capture different aspects of hope and are administered differently based on the research purpose. The THS (Snyder et al., 1991) and the SHS (Snyder et al., 1996) demonstrate strong psychometric properties, however, there are mixed findings on the GSHS (Feldman et al., 2001) that

require additional validation and revisions (Edwards et al., 2007; Robinson & Rose, 2010).

Hope subscales measure. The hope measures described above were created under one construct to be used as a single-measure analysis of the agency and the pathways subscales (Snyder et al., 1991; Snyder et al., 1996; Sympson & Snyder, 1997), however, concerns have been raised over the single-measure analysis (Day et al., 2010; Feldman et al., 2009; Gilman et al., 2006). There are mixed opinions on the best way to understand the hope subscales as either independent subscales or as a single measure. Gilman, Dooley, and Florell (2006) believe agency and pathways should be understood as separate scales and analyzed distinctly, while others continue to use the combined overall agency and pathways score to determine hope as described in the hope measure (Snyder et al., 1991). Day et al. (2010) argues,

Theoretically, agency and pathways may have a positive impact on academic achievement, but in different ways. First, agency may predict higher academic achievement via a determination that academic goals can be achieved. Second, pathways would predict future higher academic achievement via a belief that successful plans and strategies can be generated and are available to achieve academic goals. (p. 551)

To view the hope measure using a single total score would neglect to understand the unique contribution of the agency and pathways subscales (Day et al., 2010; Feldman et al., 2009; Gilman et al., 2006). Feldman, Rand, and Kahle-Wroblewski (2009) found agency to be a stronger indicator in goal attainment than the overall THS (Snyder et al., 1991) and pathways component. Feldman et al. (2009) conducted a longitudinal study to

investigate goal attainment embedded within hope theory. They found that agency thinking predicted goal attainment more than the overall score for the THS (Snyder et al., 1991). This leads researchers to question the usefulness of the pathways subscale within the THS since there is evidence that agency is a more influential component of within hope measures (Feldman et al., 2009).

Overall, the hope subscales lack consensus among researchers whether they should be evaluated as separate components or as one construct when measuring hope through different hope scales (Day et al., 2010; Feldman et al., 2009; Gilman et al., 2006; Snyder et al., 1991; Snyder et al., 1996; Sympson & Snyder, 1997). Specific findings on agency and pathways may allow additional insight into their distinct contributions to hope. The construct of hope theory requires standardization in terms of the hope subscale measures and analysis of the subscales because the lack of consistency weakens the findings on hope for both researchers and consumers of the research (Day et al., 2010; Feldman et al., 2009; Gilman et al., 2006).

Additional hope measures. Within Snyder's hope theory, one of the two subscales include agency, and is implied to exist within one's internal and individual process (Snyder et al., 1991). Agency however, is believed to reside not only within oneself, but also be influenced by external individuals like vicarious learning from others, examples, and effective persuaders who encourage (Sheehan & Rall, 2011). Snyder's hope scales do not formally recognize the external influences of hope that impact agency through the hope scales and have been criticized for the singular focus on the individual and not enough recognition to the community within which an individual exists (Bernardo, 2010, Du & King, 2013; Scioli, Ricci, Nyugen, & Scioli, 2011).

Multiple researchers have reimaged Snyder's hope scale in an effort to create a more holistic measure of hope (Bernardo, 2010; Du & King, 2013; Scioli et al., 2011). Bernardo (2010) conceptualizes that hope not only rooted in individual and internal sources but also influenced by external significant others. Bernardo (2010) proposed an extension of hope theory to include an external locus of hope within his Locus of Hope Scale, which includes a 4-factor model: internal locus of hope (agents and pathways) and external locus of hope (agents and pathways). The internal locus of hope is similar to Snyder's (1991) THS, but the external locus of hope is further divided into family, friends and spiritual locus of hope (Bernardo, 2010).

The internal and external locus of trait hope has been used in confirmatory factor analysis to test the dimensions in two studies with Filipino university students. The first study validated the four locus of hope dimensions proposed by Bernardo (2010) by using Snyder's original THS (Snyder et al., 1991) and adding the external locus of hope scale by modifying the original THS. Eight items were added for each of the three, external locus of hopes: family, peers, and spiritual. A confirmatory factor validated the 4-factor hope scale model and showed high Cronbach's alphas ranging from .80-.95 (Bernardo, 2010).

The second study mentioned within Bernardo's study (2010) tested the assumption that the individual's societal view (individualistic or collectivist) would predict locus of hope (internal or external). The results support the hypothesis that internal locus of hope aligned with individualistic societal views and external locus of hope aligned with collectivist societal views. In other words, individuals who had an external locus of control were associated with collectivist beliefs, and individuals who

had an internal locus of control were associated with individualistic beliefs. The results of the two studies are limited in generalizability because the study was conducted among Filipino students in a collectivist culture, largely influenced by Catholicism and Protestantism. The fit index of the external locus of hope was not fully supported by the data (Bernardo, 2010). Some evidence surfaced to support the distinctiveness of the internal and external locus of hope dimensions, but additional studies in individualistic cultures as well as collectivist cultures are needed.

More recently, Du and King (2013) explored Bernardo's extension of the hope theory in relation to self-construction and adjustment with Chinese university students. Within this study, self-construction was predicted to determine locus of hope (internal vs. external) and psychological adjustments were examined based on the locus of hope. Findings show that independent self-construction was associated with internal locus of hope and interdependent self-construction was associated with external locus of hope. External locus of hope was related to the external groups (family and friends), but not spirituality (Du & King, 2013). The results could exclude spirituality because Chinese university student participants may have had negative perceptions of spirituality.

Both internal and external locus of hope demonstrated psychological adjustment (life satisfaction and self-esteem). External locus of hope impacts life satisfaction and self-esteem differently than internal locus of hope. "People who place hope in their families and friends are also more likely to feel satisfied with their lives, to feel good about themselves, and also feel happy with their larger social groups" (Du & King, 2013, p. 336). Individuals with an external locus of hope were more likely to seek relationships and less likely to be isolated. Based on the source of hope individuals draw from,

psychological adjustment varies. How people see themselves impact the locus of hope, psychological adjustments, and likelihood to seek collaborative relationships (Du & King, 2013; Scioli et al., 2011).

Finally, Scioli et al. (2011) discuss hope theory within multiple disciplines and called for an integrated approach to hope. An interdisciplinary literature review of hope from psychology, from philosophy and theology, from psychiatry, and in nursing, were summarized and highlight the need for a hope measure that is comprehensive. The interdisciplinary literature review of hope from the various fields revealed four primary components: goals or mastery, attachment, survival/coping, and spirituality. From the literature review, Scioli et al. (2011) created a distinct extension of hope research which views hope as an emotional and future-directed network consisting of complex interrelated parts. The interrelated parts include mastery, attachment, survival, and spiritual sub-networks. The four sub-networks mastery, attachment, survival, and spiritual are inter-linked and built on one another (Scioli et al., 2011).

More specifically, Scioli et al. (2011) developed a comprehensive hope measure in a separate updated Comprehensive State Hope Scale (CHS-S) and an updated Comprehensive Trait Hope Scale (CHS-T) which encapsulates all four sub-networks described above. Although the comprehensive hope measures untapped areas within hope such as survival, spiritual, attachment, and mastery, it neglects to integrate pathways, or goal-oriented steps as originally included by Snyder's hope theory which has been the primary measure of hope within psychology (Snyder & Lopez, 2005). Overall, the CHS-S was viewed as a 4-factor structure, and the CHS-T was viewed as a 6-factor structure as a result from the exploratory and confirmatory factor analysis (Scioli et al., 2011).

Additional tests will strengthen the validity and reliability of Scioli et al.'s (2011) comprehensive hope measure.

In summary, Snyder is a widely recognized hope theorist in the psychology field who laid the foundation for hope research (Scioli et al., 2011; Snyder & Lopez, 2005). Although Snyder's hope theory and scales have been validated through numerous studies and have demonstrated strong psychometric properties, it has its shortcomings (Day et al., 2010; Feldman et al., 2009; Marques et al., 2017; Snyder et al., 1991; Snyder et al., 2002b). There continues to be a debate around the hope subscales as a single measure (Day et al., 2010; Feldman et al., 2009; Gilman et al., 2006; Snyder et al., 1991; Snyder et al., 1996; Sympson & Snyder, 1997). The individualistic focus of Snyder's hope measures is criticized, and researchers like Bernardo (2010) and Scioli et al. (2011) have added extensions to Snyder's original hope scales to create a more holistic measure of hope.

Empirical Research on Hope

Hope theory emerges from positive psychology and closely aligns with related themes such as self-esteem, optimism, problem solving and self-efficacy (Snyder & Lopez, 2005). Previous research found high-hope positively associated with not only positive psychological factors, but also academic performance such as achievement tests, college and high school GPA, graduation rates (Gallagher et al., 2017; Gilman et al., 2006; Snyder et al., 2002b). The reason may reside in the enduring resilience of hope.

An individual with a high level of hope is able to find benefits in the face of challenges, as well as identify alternative routes to overcome barriers (Affleck & Tennen, 1996). The ability to identify benefits is a coping mechanism within stress research that

supports psychological well-being. Furthermore, high-hope individuals positively restructure themselves, which support successful adaptation to adverse events. Affleck and Tennen (1996) observed that a hopeful individual can overcome threats.

“In the face of adversity, cognitively complex individuals should be better able to pursue alternative goals and find more flexible ways of achieving them. This is one way of interpreting the redefinition of threatening experiences that occurs when people see the threat as an opportunity to change their life goals, values or priorities in desirable ways” (Affleck & Tennen, 1996, p. 910).

Contrary to popular belief, many college students experience mild to severe distress more than previous generations at a growing rate (Twenge, 2000). Hope can act as a buffer against negative outcomes during this delicate period for young adults in both psychological well-being, as well as positive outcomes in academic achievement (Snyder et al., 2002b).

Study of Adaptational Significance of Finding from Adversity

Affleck and Tennen (1996) explored the effects of benefit-finding in the midst of adversity and the implications on psychological well-being and adaptation. Thirty-five participants living with fibromyalgia were surveyed regarding benefit-finding, using the Inventory of Perceived Control Beliefs Survey (IPCB). Results indicated that the personality traits high openness, extraversion and low narcissism, and dispositions such as hope, and optimism predicted psychological well-being. Extraversion correlated highest with benefit-finding. Participants with greater hope identified more benefits from living with chronic pain when controlled for optimism. They also found benefit-finding

and benefit-reminding were used as coping strategies through a daily self-monitoring exercise of fibromyalgia symptoms, behaviors, emotions, experiences, and cognitions.

The ability to plan alternative routes to meet goals (pathways thinking) was the underlying factor that produced benefit-finding and benefit-reminding. Benefit-reminding improved emotional well-being (pleasant and aroused moods) on more difficult days but did not decrease pain intensity. Benefit-finding was a coping mechanism within stress research that supports psychological well-being (Affleck & Tennen, 1996). There is debate whether benefit-finding is associated with denial; however, current research does not support benefit-finding as a maladaptive coping skill because of the positive adaptation outcomes. Benefit-finding predicted future emotional well-being and long-term health benefits through health behavior changes and social support (Affleck & Tennen, 1996).

Although the study clarified benefit-finding as a coping mechanism, the perspective originated within stress research for individuals living with fibromyalgia and did not apply to most individuals in the general population who did not experience chronic pain. There may be overlapping areas with stress and hope research, but the implications within Affleck and Tennen's (1996) study are viewed with caution within hope research. The study had a small number of participants ($N = 35$), but the within-person analysis was helpful to understanding the significant difference in mood, despite the ongoing pain intensity.

The Function of Hope and Goal Attainment

Hope theory (Snyder et al., 1991; Snyder et al., 2002b) functions under the foundational understanding that hopefulness relates to an increase in goal attainment.

Hope has been shown to promote stretch goals, which is defined as goals that may be slightly more difficult to attain than perceived ability. Stretch goals allow flexibility to find alternative routes to obtain a desired goal, but are they connected to goal attainment? Feldman et al. (2009) investigated the foundational assumption within hope theory (Snyder et al., 1991) that hope predicts goal attainment through a 3-year, longitudinal study. Participants included 162 college students who completed hope measures and goal importance scales at the beginning of the study (time 1) and completed goal attainment and hope measures at the follow-up meeting 3 months later (time 2).

The findings indicate that the level of importance of a goal influences cognitive-motivation with goal specific agency to accomplish the goal (Feldman et al., 2009). The results also show that individuals adjust their hope as they experience success or failure in pursuing goals; individuals who had low goal attainment showed reduced hope scores on their time 2 marked by an average of 2.41 points. In contrast, individuals who had high goal attainment showed an increase in hope scores on their time 2 marked by an average of 1.44 points. Goal-specific agency was directly influenced by goal attainment (β s = .34 to .51), above and beyond the influence of time 1 goal-specific agency. Time 2 goal-specific pathways was directly influenced by goal attainment (β s = .17 to .44).

The reciprocal nature of hope and goal accomplishment is highlighted through the findings of this study. This study supports the notion that success or the failure of goal attainment influences goal-specific agency more than previous goal-specific pathways. In addition, goal-specific measures of hope (agency) predicted goal attainment better than the THS (Snyder et al., 1991). This finding further supports evidence that agency is a more influential component of hope than pathways. A separate analysis of agency and

pathway subscales may shed additional insight into the unique properties of each subscale.

A critique of the study conducted by Feldman et al. (2009) includes the widely sampled undergraduate population within the hope literature (Snyder et al., 1991; Snyder et al., 1996; Snyder et al., 2002b). Studies should include a wider range of populations to test the generalizability of hope. The study was also reliant upon student self-reported determination of goal attainment, which may yield biased results.

Studies of Hope in the School Setting

According to Bashant (2016), students must experience success and mastery to be motivated to persevere towards their goal. Students also require the belief that one will be able to find a solution or meet the desired goal (pathways thinking) to continue to pursue their goal. This belief strengthens through previous experiences of success, vicarious experiences of others, effective persuaders, or through positive social-emotional climate (Sheehan & Rall, 2011). Individuals with high-hope find ways to reach goals through cognitive means such as problem-solving and critical thinking.

Related components of hope theory, such as positive self-talk, are used to help bolster grit and perseverance required to meet the goal (Duckworth & Seligman, 2005). According to researchers Duckworth and Seligman (2005), grit and perseverance influence achievement more than intelligence. Individuals with high-hope have higher achievements in academic areas when controlled for intelligence, prior grades, self-esteem, and exam scores (Day et al., 2010; Snyder et al., 2003). Additional positive academic correlations with hope were regular attendance, academic performance, increased scores on achievement tests, higher college and high school GPA, higher

graduation rates, and lowered risk of dropping out (Snyder et al., 2002b). Overall, high-hope is positively associated with self-efficacy, self-worth, social competence, self-esteem, optimism, use of positive self-talk, setting stretch goals, athletic achievements, physical health, and a greater purpose in life (Snyder et al., 2002b).

A study by Gilman, Dooley, and Florell (2006) sought to examine students' hope level in relation to academic and psychological indicators of school adjustment. Cluster analysis was used to classify individuals as having high, average, and low levels of hope based on agency and pathways subscale scores independently. The study included 341 middle school and high school-aged students. Participants completed the following measures: The Children's Hope Scale (CHS) (Snyder et al., 1997), the Hueber's Students' Satisfaction with Life Scale (SSLS), The Behavioral Assessment System for Children (BASC) (Reynolds & Kamphaus, 1992), Structured Extracurricular Activities (SEA) and self-reported grade point average (GPA).

High-hope students differed in all independent measures compared to low-hope students and average-hope students. Students with high levels of hope reported a higher GPA and more involvement in SEA compared to students with low levels of hope. Even when compared to students with average-hope, students with high-hope had significantly higher scores in personal adjustment, global satisfaction, self-reported GPA, and lower school maladjustment and psychological distress.

In addition, 3% of students in the high-hope category fell into the School Maladjustment Composite, while 6% of average-hope students and 20% of low-hope students fell into the school maladjustment composite (Gilman et al., 2006). The Emotional Symptoms Index reflected similar findings to the School Maladjustment

Composite. Low-hope students reported higher levels of psychological distress and poor social-emotional functioning considered within the clinical range.

There was some support for the hypothesis that higher hope yields more positive mental health and academic benefits, as youth in the high-hope group reported significantly higher personal adjustment and global satisfaction, less emotional distress, and a higher GPA than even youth reporting average-hope. (p. 175)

The hypothesis that high-hope students had greater benefits than average-hope students was supported in this study. Overall, the study showed that low-hope students were at risk of significantly lower adaptive indicators and significantly higher maladaptive indicators compared to average and high-hope students. The low-hope reflect ineffective cognitive strategies to attain goals, which in turn lowers motivation to pursue goals and overall hope (Snyder et al., 2002a).

A recent meta-analysis research by Marques, Gallagher and Lopez (2017) examined 45 primary studies ($N = 9250$) on the topic of hope and academic achievement in relation to student advantages (global self-worth, positive affect, coping, positive adjustment and goal-directed thinking) and disadvantages (depression and negative affect). The results indicate that hope has a moderate, positive relationship with GPA and student advantages, and a moderate, negative relationship with student disadvantages. Hope had a small to moderate, positive and significant relationship with overall academic outcomes ($k = 23$, mean $p = .23$, $SD = .10$) (95% CI [.20, .26]). When analyzed specifically for academic achievement (GPA), there was a small to moderate and positive relationship ($k = 17$, mean $p = .27$, $SD = .09$) (Marques et al., 2017).

Secondary outcomes were also analyzed for student advantages and disadvantages. The hypothesis that hope would be statistically significant and positively correlated with student advantages and negatively correlated with student disadvantages was supported. Twelve percent of the participants who had high-hope had better secondary outcomes than participants with low-hope. In addition, hope was found to have a stronger connection with academic outcomes and a positive correlation with student advantages in elementary, middle, and high school level students than for older students (undergraduate and graduate students) (Marques et al., 2017). The meta-analysis research found that hope accounted for 41% of the variance in the outcomes, and supports the finding that hope is a significant predictor of academic achievement and related indicators.

Studies of Hope and Academic Achievement

Research on academic performance in connection with motivation constructs (such as self-efficacy and optimism) have made notable contributions to the field; nonetheless, gaps in the research remain. One probable reason for the inconsistencies in the use of the THS (Snyder et al., 1991) to measure academic specific goals, instead of using the DSHS to measure academic specific goals (Simpson & Snyder, 1997).

In response, Feldman and Kubota (2015) attempted to make distinctions between hope (general hope and academic specific hope), self-efficacy, and optimism in efforts to accurately assess hope's unique ability to predict college GPA. They noted the differences between the three constructs (hope, self-efficacy, and optimism) as they relate to identified goals. Goals, as defined by hope theory, are cross-situation and endure through multiple settings. (Snyder et al., 1991). Hope emphasizes belief in the

individual's goal-directed action. Self-efficacy, on the other hand, is an individual's expected ability to attain goals. Self-efficacy is situation specific, such as holding high expectations in academics while having low expectation in relationships (Bandura, 1977). It is also focused on the actions necessary for a particular situation rather than the belief behind the action (Snyder & Lopez, 2005). Optimism is defined as an individual's general expectation of a good outcome, regardless of their actions. Optimism aims to avoid negative outcomes, while hope tries to attain positive goals (Snyder & Lopez, 2005).

Within a goal-oriented environment such as a school, hope is proposed to be a better predictor of success than optimism or self-efficacy (Feldman & Kubota, 2015). Hope includes goal-directed determination (agency) and planning to meet the goal (pathways). Hope does not depend on the existence of pathways, but on the belief that such pathways exist (Snyder et al., 1991). Because the emphasis within hope theory is on the belief driving the actions, it offers a unique contribution to goal achievement that self-efficacy and optimism are unable to provide.

The study by Feldman and Kubota (2015) used the THS (Snyder et al., 1991), DSHS, General Self-Efficacy Scale, Academic Self-Efficacy Scale (ASES), Life Orientation Test-Revised (optimism), and GPA on 89 college participants to distinguish the impact of academic specific hope in predicting academic achievement. General and Specific Self-Efficacy Scales, as well as Optimism Scales, were also used to measure the connection between the three related constructs.

The results indicate generalized hope predicted academic specific hope ($\beta = .57, p < .001$), and academic self-efficacy ($\beta = .55, p < .001$). Furthermore, academic-specific hope predicted GPA ($\beta = .54, p < .001$) and academic self-efficacy ($\beta = .23, p = .02$). In

summary, generalized hope correlates with academic specific hope and academic self-efficacy. The same is not true for general self-efficacy. Specifically, the correlation between general hope and GPA ($r = .32$) was significantly smaller than the correlation between academic hope and GPA ($r = .69$), $Z = 4.42$, $p < .01$; the correlations between general self-efficacy and GPA ($r = .31$), $Z = 5.36$, $p < .01$, did not predict academic self-efficacy.

This finding was consistent with the result of previous research in self-efficacy being situation specific and not generalizable. Finally, optimism did not predict GPA. Cumulative, generalized hope predicted GPA through domain-specific hope measures, but the same was not true for self-efficacy or optimism (Feldman & Kubota, 2015).

Snyder et al. (2002b) conducted a 6-year longitudinal study investigating individual's levels of hope in predicting cumulative GPA, graduation rate, and the likelihood of school drop-out. Hope was used as a motivation model to help students' successful pursuit of educational achievements. The prediction that high-hope students would have a higher GPA, higher graduation rates, and lower dropout rates was confirmed (Snyder et al., 2002b). The participants included 213 college freshmen from a Midwestern state university and used the THS (Snyder et al., 1991) to measure participants' global level of hope across situations. GPA and graduation status were measured in relation to hope. Low-, average-, and high-hope groups of students were identified based on the results of the THS (Snyder et al., 1991), and academic status was analyzed. Results indicate no significant differences based on gender.

The variance of hope and cumulative GPA was measured through one-way analysis and was found significant, $F(2, 210) = 5.51$, $p < .01$, $\eta^2 = .05$. Group means were

2.44 ($SD = 0.81$) for the low-hope group, 2.72 ($SD = 0.71$) for the average-hope group, and 2.85 ($SD = 0.65$) for the high-hope group. High and low-hope groups differed at .05 using Tukey's honestly significant difference test.

Trait hope effect had a significant relationship to GPA as measured at the end of the first semester $F(2, 210) = 4.75, p = .01$. The mean GPAs for the low-, average-, and high-hope groups were 2.40 ($SD = 0.82$), 2.71 ($SD = 0.71$), and 2.77 ($SD = 0.65$) respectively, with the low- and high-hope groups being significantly different at .05. The analysis showed a significant effect of trait hope $F(2, 189) = 5.25, p < .01$.

Trait hope effect continued to have a significant relationship to GPA at the end of the second semester $F(2, 189) = 5.25, p < .01$. The mean GPAs for the low-, average-, and high-hope groups were 2.37 ($SD = 0.81$), 2.54 ($SD = 0.71$), and 2.80 ($SD = 0.65$) respectively, with the low- and high-hope groups being significantly different at .05. THS (Snyder et al., 1991) scores and cumulative GPA were significantly and positively correlated, $r(211) = .21, p < .01$ (Snyder et al., 2002b).

Graduation status analysis indicated trait hope and graduation status were significantly related, Pearson $\chi^2(6, N = 213) = 14.92, p = .02$, Cramer's $V = .19$. The only significant differences between low and high-hope groups were on graduation (40.27% vs. 56.52%) and dismissal rates (25.00% vs. 7.10%). In comparison, the graduation rate for the entire cohort of 3,289 students after six years was 53.80%, which is 13% higher than low-hope students (40.27%).

The hypothesis was supported that high-hope students had higher cumulative GPAs, increased likelihood of graduating, and a lower likelihood of dropping out (Snyder et al., 2002b). Hope was a sound predictor for academic performance and influenced

motivational factors that self-efficacy and optimism did not. The findings indicate that low-hope students have lower GPAs, even as early as the first semester of freshman year and are less likely to graduate college (Snyder et al., 2002b).

Gallagher et al. (2017) studied hope and the academic trajectory of college students. They examined the role of hope in predicting academic achievement and retention of college-aged students while controlling for educational history, psychological constructs, academic self-efficacy, and engagement. The study included 229 college student participants at a large Midwestern university in the United States. All participants completed measures of hope, academic self-efficacy, and engagement prior to the end of the first semester. Student GPAs, educational history, and the number of semesters enrolled were obtained from the university registrar.

Results showed similar findings to previous literature, in that hope, self-efficacy and engagement were all correlated to achievement and retention but hope uniquely predicted academic achievement. Specifically, academic hope predicted the number of semesters enrolled, the retention rate for the 2nd semester of college, 4-year graduation rates, and overall cumulative GPAs ($b = .21, SE = .04, p < .01$). Hope was also the most robust predictor of academic achievement in college, after controlling for educational history. The findings further support the important and unique role of hope in academic achievement above previous academic achievement, psychological constructs, academic self-efficacy, and engagement as also demonstrated in previous research (Day et al., 2010; Snyder et al., 2002b).

The literature links correlations between intelligence, personality variables, and divergent thinking as a potential third variable between hope and academic achievement.

Day et al. (2010) conducted a 3-year longitudinal study to examine the relationship between hope and academic achievement while controlling for intelligence, divergent thinking, and conscientiousness. The agency and pathways subscales of hope were also examined to determine which subscale was responsible for achievement. Findings indicate that hope uniquely predicts academic achievement above intelligence, personality, and previous academic achievement (Day et al., 2010).

The study included 129 college participants in the United Kingdom who completed measures of trait hope, intelligence, the 5-factor model of personality, divergent thinking, prior academic performance, and final degree scores. Agency and pathways were separately analyzed, rather than viewed as a single score to test the distinct contribution of each hope facet to achievement. The reason for separate analysis was to dissect the distinct impact agency and pathways may have on academic achievement. The researchers hypothesized separate impacts of in agency and pathway in overall academic achievement.

Results indicate that both hope measures (agency and pathways) uniquely predicted future academic achievement when controlling for intelligence, divergent thinking, and personality. Hierarchical regression suggests pathways hope was a distinct predictor of academic achievement between pathways and agency hope. Both measures predict high correlation ($r = .80$) between hope agency and hope pathways and question whether the constructs are truly separate. The validity of $r = .17$ points to a reasonable contribution to the relationship between hope and future academic achievement. This study further supports separate analysis of the hope subscales as distinct measures.

Disadvantages of First-Generation College Students

Hope research has demonstrated the unique value of hope in contributing to academic success and bolstering psychological well-being (Gallagher et al., 2017; Gilman et al., 2006; Snyder et al., 2002b). Based on the positive effects of hope, at-risk populations should be included to also reap the benefit from hope. FGCS is defined as students whose parents' highest level of education is a high school diploma or less, and therefore are often the first in their family to attend college (Blackwell & Pinder, 2004; Nunez & Cuccaro-Alamin, 1998). FGCS are a vulnerable group that face a myriad of challenges as one of the first individuals in their family to pursue a college degree. Research shows that even when FGCS background and college factors are controlled for, FGCS status significantly predicts lower GPA (Strayhorn, 2006).

FGCS make up 30% of all college enrollments in the United States and have grown in number over the last 10 years (Strayhorn, 2006). Although FGCS are slowly growing in number in post-secondary education, fewer FGCS enroll in college after completing high school than their non-FGCS counterparts (McDonough, 2004). When comparing post-secondary enrollment rates among FGCS and non-FGCS, 72% of FGCS enrolled in post-secondary institutions and 93% of non-FGCS enrolled in post-secondary institutions (Cataldi et al., 2018). FGCS are a unique population that make up a growing portion of college enrollment, however require supports to succeed in post-secondary education.

Background factors. Multiple background, precollege and college factors impact academic success in college (Blackwell & Pinder, 2004; Strayhorn, 2006). FGCS often come from disadvantaged backgrounds linked with a higher risk of attrition in high school and in college. Ishitani (2006) conducted a study examining attrition and degree

completion behavior among FGCS in the United States through a national data set sponsored by the National Center for Education Statistics (NCES). The NCES is a Postsecondary Education Transcript Study which involves a longitudinal dataset that began in 1988 and followed 14,427 eighth-graders over 12 years.

The findings of the study show students' ethnicity demonstrate a significant impact on degree attainment for undergraduate students (Ishitani, 2006). The majority of FGCS are non-white (African American and Hispanic) and from low socioeconomic backgrounds (Chen & Carroll, 2005; Ishitani, 2006). The study found that 59% of Hispanic students graduated with their degree within four years of college, while 90% of Caucasian students graduated with their degree within four years. African American students were the least likely to graduate within four years than their counterparts with 58% who graduated with their degree within four years of college (Ishitani, 2006). The majority of FGCS are African American or Hispanic and are less likely to graduate on time compared to Caucasian students (Ishitani, 2006).

Lower family income was associated with 6-year graduation rate rather than 4-year graduation rates among FGCS. Student socioeconomic backgrounds are related to graduation rates for high school and college students. In addition, research by McDonough (2004) found that 50% of high school graduates came from families making less than \$50,000 per year, compared to 16% of high school graduates who came from families making less than \$20,000 per year. Students whose family income was lower than \$19,000 had lower high school and college graduation rates compared to students whose family income was higher than \$19,000 (Ishitani, 2006; McDonough, 2004). This finding links household income with high school graduation rates.

Students with family incomes of less than \$19,999 were 41% and 69% less likely to graduate within the fourth and sixth years, while students whose family income was in the \$20,000 through \$34,999 bracket were more likely to graduate within six years (Ishitani, 2006). Conversely, students whose family income was \$50,000 or higher were more likely to graduate in any period than were students from lower income families (Ishitani, 2006).

Overall, students with lower family income are less likely to graduate within four to six years compared to students with higher family income. Gender also played a role in on-time graduation rates. Female FGCS were 56% more likely to graduate within four years than male FGCS. FGCS are more likely to come from families and ethnic groups associated with risk of departure, and as a result, face challenges in successfully completing a college degree compared to non-FGCS. Background factors (gender, race, and FGCS) account for a small, yet significant impact on GPA (Ishitani, 2006).

Precollege factors. Not only do FGCS background characteristics decrease persistence and timely graduation, but FGCS's pre-college characteristics also increase negative academic outcomes. Student persistence and timely graduation rates are mediated by precollege characteristics such as high school academic attributes, however, FGCS are less likely to take AP/IB classes in high school and perform worse on academic placement tests prior to college (Cataldi et al., 2018; Chen & Carroll, 2005; Ishitani; 2006). A study by Cataldi et al. (2018) conducted a comparison study between FGCS and non-FGCS high school courses taken and found 27% of FGCS took high-level math in high school (statistics/ precalculus) compared to 43% of non-FGCS. FGCS were less likely to take calculus in high school (7%) compared to non-FGCS (22%). In

addition, 18% of FGCS took AP/IB classes, while 44% of non-FGCS took AP/IB classes (Cataldi et al., 2018).

The type of post-secondary education institutions FGCS enroll in also differ. FGCS tend to enroll in 2-year institutions (46%) compared to non-FGCS (26%), and conversely, a fewer number of FGCS enrolled in 4-year universities (26%) compared to non-FGCS (45%) (Cataldi et al., 2018). Within six years of starting college, FGCS who enrolled at a public or private 4-year college or university continued enrollment 65% of the time vs. non-FGCS who enrolled 83%. The percentage of enrollment in a public 2-year college dropped to 49% for FGCS and 60% for non-FGCS. FGCS are less likely to persist in a 2-year college and a 4-year college or university institutions compared to non-FGCS. Overall, precollege factors such as high school academic attributes, and the type of post-secondary institution enrollment leave FGCS in a disadvantaged position when entering college.

College factors. FGCS are less prepared for college in terms of academic readiness and cultural capital based on pre-college factors described above (Ishitani, 2006; McDonough, 1997; Padgett et al., 2012). FGCS have lower GPA's in college, are more likely to take remedial classes or drop courses, are less likely to enroll continuously, and overall enroll for fewer credits, are more likely to drop out of college and take longer to graduate compared to non-FGCS (Chen & Carroll, 2005; Ishitani, 2006).

FGCS had lower GPA in their first year of college and throughout their college years compared to non-FGCS first-year (2.5 versus 2.8) in multiple academic subjects (math, science, etc.). Twelve percent of FGCS withdrew or repeated courses compared to non-FGCS (7%) (Chen & Carroll, 2005). Fifty-five percent of FGCS took remedial

courses during college compared to 27% of students whose parents had a bachelors took remedial courses during college. Non-FGCS earned nearly twice the amount of credits throughout college compared to FGCS. FGCS also had lower credits earned as early as the first year of college, FGCS earned on average seven credits less in their first year of college, compared to non-FGCS in their first year of college. Fewer credits earned relates to attrition and departure from college without a degree completion (Chen & Carroll, 2005; Ishitani, 2006).

When comparing drop-out rates among third-year college students, FGCS had a higher dropout rate of 33% while non-FGCS had a lower dropout rate of 14% (Cataldi et al., 2018). FGCS are also less likely to graduate on time; they are 51% less likely to graduate in four years and 32% less likely to graduate in five years compared to non-FGCS (Ishitani, 2006). The second year of college is the highest departure risk period for first-generation students (4.4 times more likely to depart than non-FGCS). During college protective factors among FGSC that increased timely graduation and the likelihood of graduation include more credits earned per quarter, as well as academic performance in the first year of college (Chen & Carroll, 2005).

DeFreitas and Rinn (2013) examined the role of academic self-concept (verbal and math self-concepts) and actual academic achievement in FGCS. Self-concept is defined as one's view of themselves based on previous experiences and the evaluation of those experiences (DeFreitas & Rinn, 2013). Self-concept specifically in education is believed to be reciprocal in nature, meaning it is influenced by academic achievement and influences academic achievement (DeFreitas & Rinn, 2013). They found students with higher verbal and math self-concepts had higher GPA, $F(2, 154) = 5.85, p < .01$.

Math self-concept, specifically among FGCS, was positively related to overall academically (as expressed by GPA). This finding may indicate an individual's confidence in academic ability impacts actual academic performance, and actual academic performance feeds academic self-concept. Individuals confidence in math appears to be a stronger indicator in overall academic success (DeFreitas & Rinn, 2013).

There was no correlation between verbal self-concept and ethnicities, however, there was a correlation between math self-concept among Asians, Hispanic and African American students. Among FGCS's Asians and Hispanic FGCS have higher math self-concept compared to African American FGCS. Even among FGCS, Caucasian students performed better academically than African American and Hispanic students (DeFreitas & Rinn, 2013).

FGCS are underprepared academically to succeed in college and lack cultural capital to effectively navigate college (Ishitani, 2006; McDonough, 1997). FGCS have fewer family resources in terms of their experiences and values to successfully access college education compared to students with highly educated parents (Martinez, 2003; Padgett et al., 2012). Cultural capital is believed to influence college-educated parents to transmit values around education to their children (Padgett et al., 2012).

Not only do FGCS have less cultural capital, but also have unique non-academic outcomes from college compared to no-FGCS. A longitudinal study by Padgett, Johnson and Pascarella (2012) investigated and the impacts of the first year in college. Nineteen 4-year and 2-year liberal arts colleges and universities throughout the United States participated in the study. Parental education level was related to their children's cognitive and psychosocial outcomes among FGCS. FGCS and non-FGCS had different cognitive

and psychosocial benefits. FGCS had greater cognitive and psychosocial benefits from frequent interactions with peers and engaging in rigorous academic material than non-FGCS. Conversely, non-FGCS had greater benefits from high-quality instruction and greater benefits in psychological well-being (Padgett et al., 2012). This study highlighted the multigenerational benefits of a college experience and education. These benefits are observed through avenues of cultural benefits when comparing FGCS and non-FGCS.

Post-college educational trajectories also differ between FGCS and non-FGCS. Cataldi et al. (2018) compared post-college decisions in higher education between FGCS and non-FGCS and found that 4% of FGCS were in a continuing professional/doctorate program, while 10% of non-FGCS were in master's/doctorate program. Post-college enrollment rates were unequal between FGCS and non-FGCS, and FGCS are less likely to enroll in a higher degree past an undergraduate degree. Both FGCS and non-FGCS had similar rates in full-time employment after graduation (57-59%) and similar salary scale (Cataldi et al., 2018). The benefits of a college degree are evident in for both groups, yet FGCS are less likely to obtain an undergraduate degree and less likely to pursue a higher degree (Cataldi et al., 2018; Chen & Carroll, 2005; Ishitani, 2006).

The U.S. Department of Education, National Center for Education Statistics describe the unique challenges of FGCS, “Even when controlling for many of the characteristics that distinguished them from their peers, such as socioeconomic status, institution type, and attendance status, first-generation student status still had a negative effect on persistence and attainment” (Nunez & Cuccaro-Alamin, 1998, p. 53). Simply being a FGCS reduces the chances of graduating on time (Ishitani, 2006). FGCS status stands out as a unique risk factor for college students even among students with similar

demographic backgrounds, academic preparation, enrollment characteristics, credit production, and academic performance (Cataldi et al., 2018; Chen & Carroll, 2005; Ishitani, 2006; Nunez & Cuccaro-Alamin, 1998). Based on the risk factors which negatively impact FGCS college achievement, the present research explored hope as a moderating factor among FGCS and academic achievement.

Hope Interventions

There is limited research indicating whether hope can be raised through interventions. Current hope interventions typically target clinical populations with multi-session interventions. Feldman and Dreher (2012) sought to discover if hope (goal-directed thinking) can be raised through intervention in a non-clinical college population through a single 90-minute session. The hypothesis predicted hope interventions would increase the probability of goal attainment, and goal attainment would increase hope.

The study included 96 college students who were randomly placed in three categories (control group, hope intervention group, and relaxation group). The hope intervention included the following steps: 1. Choosing a personal goal they want to accomplish in the next six months, 2. Psychoeducation regarding hope (defining hope and explaining the components of hope theory), 3. Hope based goal mapping exercise (outlining steps to accomplish their goal and brainstorm potential obstacles), and 4. Hope visualization exercise (vivid visual imagining of steps using all five senses and ways to overcome potential obstacles). The relaxation group was taught muscle relaxation interventions, and the control group did not receive interventions.

All participants were asked to complete a pretest, Goal-Specific Hope Scale (GSHS) (Feldman et al., 2001), Purpose in Life Test (PILT) and Vocational Identity

Questionnaire (VIQ) prior to the intervention. Following the intervention for the hope and relaxation group, the post-test and one-month follow up were administered to the two groups. The results indicate that participants in the hope intervention group had greater increases in measures of hope, life purpose, and vocational calling from pretest to post-test compared to the relaxation intervention group (Feldman & Dreher, 2012).

To determine if hope predicted goal progress, the post-test and follow-up meetings were analyzed. The hope intervention group showed greater growth in goal progress from the pretest to the post-test compared to the relaxation condition group and the control group, however, the 1-month follow up did not show continued growth in goal progress. Goals rated as important increased in goal progress at the 1-month follow up for the group that received the hope intervention compared to the relaxation and no-treatment control conditions with a significant interaction effect $F(2, 65) = 4.06, p = .02$, with a *partial* η^2 of .05. Hope predicted goal progress but did not mediate the relationship between intervention condition and goal progress at the 1-month follow-up.

This is the first study to demonstrate the ability of both agency and pathways to predict goal progress. There was larger effect size in pathways (with a *partial* η^2 of .13) than agency (with a *partial* η^2 of .07) when measured separately. The study is the first to demonstrate the predictive power of both agency and pathways in goal progress. The study lends evidence to the effectiveness of a single session hope intervention in increasing hope, although multiple session interventions may lengthen the continued benefit of the intervention.

Longer hope interventions were implemented by Cheavens, Feldman, Gum, Michael and Snyder (2006), who piloted an 8-session hope therapy intervention with a

small community sample of 32 participants. The participants were randomly selected, and the wait-listed individuals were used as the control group. During the hope therapy, participants learned to set meaningful and achievable goals, enhance pathways and agency to achieve goals, consider barriers to goal achievement, and how to modify routes to meet goals.

The results show a statistically significant ($p < .05$) reduction in depression and anxiety and a statistically significant improvement in the agency hope subscale, life meaning, and self-esteem. The focus of the treatment was to increase hope, not decrease specific psychopathology symptoms, as some participants experienced (Cheavens et al., 2006). The pilot included predominantly Caucasian, married women with a mean age of 49 years old. The implications of this hope therapy intervention pilot suggest that a brief, strength-based intervention can help improve the lives of individuals by decreasing anxiety and depression while increasing motivation to pursue goals, life meaning, and self-esteem. Future researchers can further pilot hope interventions with a larger, non-clinical population of participants from diverse backgrounds to see if similar outcomes will result.

Hope interventions among FGCS groups include qualitative studies investigating hope among FGCS through avenues such as informal mentoring. Martinez (2003) conducted a qualitative study on supports for at-risk Latino students in post-secondary education. The findings show parent involvement, low expectations, transition to college, student support services, and role models being important factors in student success in college among FGCS. Although parents of many FGCS may not be able to provide the social capital that students need to navigate the school system, they show their support

and encouragement in FGCS pursuit of a college degree (Martinez, 2003). Receiving messages of low expectations from others often discourage FGCS in feeling capable of continuing onto post-secondary education. Connecting FGCS to student support services early in their college career and precollege experiences provide opportunities for FGCS to orient to college academically and socially (Martinez, 2003). Role models are a significant component of FGCS success in creating a positive, mentoring relationship.

In another study, Morales (2009) explored the effects of mentoring for Dominican American male college students. First-generation Hispanic, male students from low socioeconomic backgrounds are an at-risk group among college students. Morales sought to understand the role of mentoring relationships of this at-risk group to bolster the cultural capital FGCS lack (McDonough, 1997; Morales, 2009; Padgett et al., 2012). Semi-structured interviews were used to delve into the academic impact of informal mentoring for Dominical male college students.

Three themes arose from the process: mentors are suppliers of insider information, mentors as approvers and mentors encourage the American dream. Mentors provide professional and academic knowledge to students that range from teaching study skills, procedural information or access to opportunities or significant people. Mentors as approvers legitimize and encourage education plans of students. Finally, mentoring the American dream allows students to feel pride in themselves and their achievements. The study was limited in the generalizability of the findings because of the narrow population that was examined, however informal mentorship may be a helpful resource for FGCS. The difficulty in mentorship opportunities is for FGCS to know the availability of these resources and access these opportunities (Strayhorn, 2006).

Within the hope interventions outlined above, the few studies of hope among FGCS give suggestions of what may build hope, but do not use a formalized definition of hope and do not measure changes or growth in hope. Outside of the education setting, most of the research is with clinical populations through multi-session interventions. Although hope has been widely recognized to be a positively correlated factor in academic achievement, interventions to increase hope are lacking within the education setting and among at-risk populations like FGCS.

Conclusion

The purpose of chapter two was to provide a review of hope theory and analyze the literature surrounding hope, academic achievement, and FGCS. Numerous research outlines the positive psychological benefits of hope (Affleck & Tennen, 1996; Cheavens et al., 2006; Feldman & Dreher, 2012), as well as the bright academic trajectory of students with high-hope (Gallagher et al., 2017; Gilman et al., 2006; Snyder et al., 2002b). While much research has shown that hope is positively associated with academic achievement, hope as a protective factor has not been thoroughly studied in relation to FGCS.

In the present research, students' self-reported cumulative GPA, academic self-efficacy, along with their hope levels were compared for both FGCS and non-FGCS. The findings may allow further insight into student perceptions of academic achievement (reflected through self-reported cumulative GPA) in relation to hope levels and academic self-efficacy between FGCS and non-FGCS. Findings may suggest that student's hope levels may impact academic achievement differently for FGCS and non-FGCS. In conclusion, chapter two reviewed previous literature to set the stage for the current study

to examine the relationships between hope, academic self-efficacy, and self-reported cumulative GPA for both FGCS and non-FGCS.

Chapter Three

Research Method

The purpose of this research study was to investigate the relationships between hope, academic self-efficacy, and self-reported cumulative GPA between FGCS and non-FGCS. This chapter will discuss the research methodology, which will include the research questions, design, participants, sampling procedure, instrumentation, and the data analysis. The research questions, hypothesis, and research design will be discussed first, followed by participants and sampling procedure. Finally, the instrumentation and data analysis are outlined. Student's hopefulness was measured by the THS (Snyder et al., 1991), academic self-efficacy was measured by the ASES (Chemers et al., 2001), and academic achievement was measured by student self-reported cumulative GPA. The research design and methods, participants, sampling procedures, instrumentation, data analysis, and anticipated results are included in this chapter.

Research Questions

1. What are the correlations between trait hope, academic self-efficacy and academic achievement among college students, as reflected in their self-reported level of trait hope, academic self-efficacy, and GPA among college student?

H₀: There are no statistically significant correlations between trait hope, academic self-efficacy, and academic achievement among college students, as reflected in their trait hope, academic self-efficacy, and self-reported GPA.

H₁: There are statistically significant correlations between trait hope, academic self-efficacy, and academic achievement among college students, as reflected in their self-reported trait hope, academic self-efficacy, and self-reported GPA.

2. Which factor - agency or pathway - of trait hope, as measured by the agency subscale and the pathways subscale, would be a stronger predictor of academic achievement among college students, as measured by their self-reported GPA?

H₀: There is no difference between the strength of the agency factor and the pathways factor in predicting academic achievement among college students.

H₁: There is a difference between the strength of the agency factor and the pathways factor in predicting academic achievement among college students.

3. Does academic self-efficacy mediate the relationship between agency and academic achievement?

H₀: Academic self-efficacy does not mediate the relationship between agency and academic achievement.

H₁: Agency will significantly and positively predict academic self-efficacy, which in turn would significantly and positively predict academic achievement as reflected in self-reported GPA.

Research Design

The present research was a non-experimental correlational research design that examined the relationships between hope, academic self-efficacy, and academic achievement (as reflected in students' self-reported cumulative GPA) among college students. Correlational research is used most often to predict and explore the relationships between variables, but it cannot determine a cause and effect relationship because the variables are not manipulated (Field, 2013). Field (2013) describes correlational research as observing what naturally goes on in the world without interference, whereas in experimental research the variables are manipulated to see its effect on another variable.

In addition, the correlation coefficient does not indicate the direction of causality (does the independent variable effect the dependent variable or does the dependent variable effect the independent variable) (Field, 2013). The purpose of correlational research is to analyze the variables and to observe the relationships rather than investigating a cause and effect relationship.

The preliminary analysis explored group differences between FGCS vs. non-FGCS, white/Caucasian vs. non-white, and gender groups with all variables. An independent samples t-test was used to compare two means from different groups to see if there was a statistically significant difference. To compare group differences between categorical predictors in a linear model, FGCS status variable was included as a categorical predictor variable through binary coding (0 for FGCS and 1 for non-FGSC) in the standard analysis (Vogt & Johnson, 2011). Similarly, an independent samples t-test was used to compared group differences between white/ Caucasian and non-white groups.

Gender differences among the variables hope, academic self-efficacy and self-reported GPA used an analysis of variance (ANOVA) to predict values of one variable from another. Gender was included as a categorical predictor variable through coding (0 for male, 1 for female, 2 for transgender, 3 for gender non-conforming/gender fluid, 4 for 'other' – in the standard analysis (Vogt & Johnson, 2011). The R^2 tells how much variance is explained by the model. The F -value describes the ratio of explained to unexplained variance (Vogt & Johnson, 2011). The b -value explains the strength of the relationship between the predictor and the outcome variable ($p < .05$ indicates the predictor significantly predicts the outcome variable).

In addition, mediation analysis was conducted to include variables predicted to mediate the relationship between trait hope and academic achievement based on prior research. Traditionally, mediation was tested through a round of regression analyses however, estimating the indirect effect and its confidence interval reveals the degree of mediation observed (Hayes & Scharkow, 2013). Andrew Hayes and Kristopher Preacher's process v3.3 macro (2004) command was utilized for the mediation analysis on SPSS. The mediation analysis tool assesses the size of the indirect effect using bootstrapped estimates and 95% bias-corrected (BC) and its confidence interval (CI) (Hayes & Preacher, 2004).

Additionally, Hayes and Scharkow (2013) recommend the bias corrected bootstrap interval as the most trusted and powerful method to test indirect effects in mediation analysis. The bootstrapping method is a nonparametric approach that makes no assumptions about the distribution of the variables or the sample statistics (Tabachnick & Fidell, 2013). It also tests for the effect size with 5,000 resamples. If the confidence interval does not include zero, it is safe to believe a genuine mediation exists in the model (Field, 2013).

Trait hope, GPA and academic self-efficacy. In research question number one, the correlations between the variable's trait hope, self-reported GPA, and academic self-efficacy were examined among the undergraduate participants in the study. A Pearson correlational analysis was used to describe the relationships between hope, self-reported GPA, and academic self-efficacy (Field, 2013). A Pearson correlation is a type of correlation that measures the degree of linear relationship between variables that can be measured on interval or ratio scales (Vogt & Johnson, 2011). As a parametric method,

descriptive statistics was run prior to moving forward to check for homogeneity of variance and normality. Self-reported GPA and hope scales are interval data and meet the criteria of a parametric method. The Pearson correlation coefficients (represented through r), were calculated to describe the degree of relationships between variables, and test for statistical significance at a predetermined alpha level of .05. Pearson's r describes whether there is a positive, negative, or no relationship between the variables (Field, 2013). A correlation coefficient of +1 would indicate a perfect positive relationship, while a -1 would indicate a perfect negative relationship. A correlation coefficient of 0.45 would indicate an average correlation, and 0 would indicate no relationship between the variables. Based on previous research, a positive correlation was hypothesized between hope and self-reported cumulative GPA among college students.

Agency versus pathways. The second research question examined if there was a statistically significant difference between the strength of the agency factor and the pathways factor in predicting academic achievement (self-reported cumulative GPA). A hierarchical regression analysis was conducted with both agency and pathways as predictors. The regression determines if an outcome is predicted by a linear combination of two or more predictor variables. The outcome is denoted as Y , and each predictor is denoted as X . Each predictor has a regression coefficient b associated with it, and b_0 is the value of the outcome when all predictors are zero (Field, 2013).

Analysis of regression assumptions of normality, linearity and homoscedasticity of residuals, outliers and issues of multicollinearity were examined (Tabachnick & Fidell, 2013). The multiple correlation coefficient R gave a measure of the relationship between an outcome variable and some combination of predictor variables. A coefficient of

determination R^2 which expresses the amount of variance in the outcome variable that is explained by a predictor variable or combination of variables (Tabachnick & Fidell, 2013). A p value of less than .05 indicated the result was statistically significant. The Variance Inflation Factor (VIF) and the tolerance statistic were checked to determine the risk of multicollinearity in the analysis. A tolerance below 0.2 indicates a potential problem and if the average VIF is substantially greater than one then the regression may be biased (Field, 2013).

The agency and pathways standardized beta values (i.e., their slopes) were compared to determine which factor is a stronger predictor of the outcome – the GPA. The standardized beta's bigger absolute value indicated the amount of importance within the model (Field, 2013). The predictor variables significant contribution to predicting the outcome is revealed by a value less than .05 in the *Sig.* column.

Mediation analysis. A mediation analysis indirectly assesses the effect of the mediator, in the relationship between the predictor variable and an outcome variable. The predictor was believed to impact the mediator, the mediator was believed to predict the outcome, and finally, the relationship between the predictor and outcome would change when the mediator was included in the model (Field, 2013). In other words, the mediator would explain the relationship between the predictor and outcome to a certain degree that was observed through a decrease in the relationship between the variables. In this case, agency was the predictor variable, self-reported GPA was the outcome variable, and academic self-efficacy was examined as the mediating variable.

Sampling procedure and participants. The present research questions were not related to causality; therefore, a convenience sample was chosen as an appropriate

method for the non-probability sampling quantitative research (Gall, Gall, & Borg, 2007). The participants in this study were not be randomly selected however, the accessible populations include participant recruitment from a small faith-based university in the Northwest. Students were recruited from the university's undergraduate psychology department, International Undergraduate Services, Multi-ethnic Programs and through tabling. The three programs and departments listed above were specifically chosen as accessible populations in effort to recruit enough FGCS to make a meaningful comparison to non-FGCS for the current study. FGCS were anticipated to be part of the three programs and departments as accessible populations for participant recruitment. An Institutional Review Board (IRB) application was submitted to the university and approved prior to data collection.

Based on the data from the university's website from the fall of 2018, the approximate enrollment for the following groups are: undergraduate 2,887, post-baccalaureate 24, graduate 788, and total enrollment 3,688. Undergraduate non-white students made up 40% of the population, of many who are FGCS. The cost of attendance for undergraduate students is approximately \$50,000 per school year.

Participants were recruited in the undergraduate classrooms at an agreed upon date towards the end of their class session with the permission of the professors. Students in the class were read a brief verbal script describing the research study and participant rights (see Appendix D). They were informed that they would be included in a drawing that would allow them to be eligible to win either a \$50 or a \$20 gift card for their involvement in the study. There was an opportunity for students to ask questions about the research study. Those who do not wish to participate in the study were dismissed

from the class. For those who wanted to participate in the study remained in the class and were asked to spend a total of 10-15 minutes completing the online survey that comprised of the demographic information questions, and THS (Snyder et al., 1991) and ASES (Chemers et al., 2001) through an electronic device (laptop, cell phone, iPad etc). An electronic copy of the consent letter was provided through the online survey. The survey took no more than 10-15 minutes to complete. The total time for the listening portion and completing the online survey was 20-25 minutes.

Instrumentation

Trait Hope Scale. The instrument that was used in this research study was the THS (Snyder et al., 1991), (see Appendix A). The students who participated in the project were asked to complete the online version of the THS (Snyder et al., 1991) based on the hope theories of Charles Snyder developed in 1991 (Snyder et al., 1991). The survey includes 12-items scaled from 1 (*definitely false*) to 8 (*definitely true*) secured through a password protected website (see Appendix A).

The THS (Snyder et al., 1991) measures hope remains consistent in the definition of hope as an individual's perception of capability through a clearly conceptualized goal, strategies to reach those goals (pathways thinking), and motivation to use the strategies to obtain goal (agency thinking) (Snyder & Lopez, 2005). The THS (Snyder et al., 1991) has demonstrated sound psychometric properties and has been used in numerous studies to measure hope (Day, et al., 2010; Feldman, et al., 2009; Marques, Gallagher, & Lopez, 2017; Snyder, et al. 2002b).

The initial development of the THS (Snyder et al., 1991) had 45 hope-related items in the scale and was later condensed and validated through concurrent and

discriminant validity. The original THS (Snyder et al., 1991) was administered to 384 students from the University of Kansas and was later distilled down to 12-items total. The final THS included 4-items measuring pathways, 4-items measuring agency, and four filler items (Snyder et al., 1991). Factor analysis was conducted to explore pathway and agency as two separate, yet related factors. Exploratory factor analyses with oblique rotations (from the factor pattern matrixes) were performed on the eight THS items (Snyder et al., 1991). An exploratory factor analysis is typically used to determine the best fit among a set of variables and is primarily a tool for theory building. The 4-items thought to measure pathways and the 4-items thought to measure agency demonstrated strong factor loadings (above .60) in the respective factors (Field, 2013). The two factors accounted for 52% to 63% of the variance across the samples.

Reliability. The internal consistency reliability of the THS (Snyder et al., 1991) indicates high reliability ($\alpha > .70$) (Vogt & Johnson, 2011). The total scale ranged from a Cronbach's alphas .74 to .84 (item-remainder coefficients of .23 to .63). The agency subscale Cronbach's alphas ranged from .71 to .76 (item remainder coefficients of .40 to .72); the pathways subscale Cronbach's alphas ranged from .63 to .80 (item remainder coefficients of .36 to .63). In addition, test-retest reliability of the THS (Snyder et al., 1991) has been examined in four separate samples of University of Kansas undergraduates 85, $p < .001$, over a 3-week interval, .73, $p < .001$, over an 8-week interval, and .76, and .82, respectively, $p < .001$, over 10-week intervals (Snyder et al., 1991).

In addition, the THS (Snyder et al., 1991) in a longitudinal study by Feldman et al. (2009) report a Cronbach's alpha of .82, the mean of 26.24 ($SD = 2.98$) and 25.30 (SD

= 3.21) for agency and pathways respectively. Day et al. (2010) further supports the reliability of both subscales to have adequate internal reliability with Cronbach's alpha from .70 to .84 (agency subscale) and .63 to .86 (pathways subscale).

Having been used with a wide range of samples, the THS (Snyder et al., 1991) demonstrated acceptable: (1) internal consistency (overall alphas from .74 to .88; agency alphas of .70 to .84; and pathways alphas of .63 to .86); (2) test-retest reliabilities ranging from .85 for 3 weeks to .82 for 10 weeks (Snyder et al., 1991). Snyder et al. (1991) supports the test-retest reliability of the scale over several weeks of .85, as well as internal reliability of .86 for the overall THS, and .74 for the pathways subscale and .81 for the agency subscale (Snyder et al., 2002b).

Validity. The THS (Snyder et al., 1991) demonstrated convergent validity with the Self-Esteem Scale (SES), ($p < .005$), generalized positive outcome expectation (Life Orientation Test) (LOT) .60 and .50 ($p < .005$), and control perceptions through the Burger-Cooper Life Experiences Survey .54 ($p < .005$). It also demonstrated divergent validity through an inverse relationship with depression, $r = -.60$ (Minnesota Multiphasic Personality Inventory (MMPI), hopelessness (Trexler's Hopelessness Scale) $r = .51$ ($p < .005$), and other psychological problems. The THS (Snyder et al., 1991) demonstrated convergent validity through positive correlations with standard measures of optimism, self-esteem, and problem-solving (Feldman & Kubota, 2015), and negative correlations with measures of hopelessness, depression, and introversion (Gilman et al., 2006).

Academic Self-Efficacy Scale. The Academic Self-Efficacy Scale (ASES) (Chemers et al., 2001) was used in this research study to capture participants' specific academic self-perceptions and skills such as prioritization abilities, note taking, test

taking and more (see Appendix C). The ASES was included in the online version of the THS (Snyder et al., 1991) as well as the demographic questions. The survey includes 8-items scaled from 1 (*very untrue*) to 7 (*very true*). The survey and demographic questions took approximately 10-15 minutes to complete through a secure password protected website (see Appendix A, B, & C). The ASES demonstrates sound psychometric properties within Chemers, Hu and Garcia's (2001) report (coefficient alpha of .81) and subsequent study by Feldman and Kubota (2015) (Cronbach's alpha of .83). Gallagher, Marques and Lopez (2017) also report high internal consistency ($\alpha = .84$).

Overall, this research study sought to understand the relationships between hope, academic self-efficacy, and self-reported GPA among college students (FGCS and non-FGCS groups) through a non-experimental research design. Student's hopefulness was measured by the THS (Snyder et al., 1991) on an 8-point Likert scale and student's academic self-efficacy was measured by the ASES (Chemers et al., 2001) on a 7-point Likert scale. Academic achievement was measured by students' self-reported cumulative GPA. The results are reported in chapter four.

Chapter Four

Results

The present research was a quantitative study that examined the connections between hope, academic self-efficacy, and academic achievement, as measured by self-reported cumulative GPA, to understand the role of hope among FCGS and non-FGCS academic achievement. Academic self-efficacy is an internal factor that shares similar properties as hope, which has been examined with academic achievement in previous studies (Feldman & Kubota, 2015; Gallagher et al., 2017; Snyder et al., 2002b; Snyder & Lopez, 2005). Academic self-efficacy was added as a third variable within the present research to examine the distinction between hope and self-efficacy, and whether academic self-efficacy mediates the relationship between hope and academic achievement.

Hope was measured through the THS, which was designed to measure an individual's perception of capability through clearly conceptualized goals, strategies to reach those goals (pathways), and motivation to use the strategies to obtain goal (agency) (Snyder et al., 1991; Snyder & Lopez, 2005). The THS demonstrates high validity (convergent) with standard measures of optimism, self-esteem, and problem-solving (Feldman & Kubota, 2015), and negative correlations with measures of hopelessness, depression, and introversion (Gilman et al., 2006). The THS has been used in numerous studies to measure hope (Day, et al., 2010; Feldman, et al., 2009; Marques et al., 2017; Snyder et al., 1991; Snyder, et al. 2002b).

Although hope and self-efficacy share similar components, self-efficacy is focused on the individual's perception of their ability to attain a desired goal within

domain-specific circumstances (Bandura, 1977; Snyder & Lopez, 2005). Self-efficacy is not viewed as a skill or generalized trait, but a belief within specific self-efficacy measures in particular domains. Chemers and colleagues (2001) created the Academic Self-Efficacy Scale (ASES) to specifically measure individuals' confidence specifically with academic achievement. The present study examined the role of academic self-efficacy in comparison to general hope as a predictor of academic achievement.

Demographic Data

All participants in the sample were undergraduate students enrolled at a small faith-based university in the Northwest, and the data was collected through an electronic version of the THS (Snyder et al., 1991), the ASES (Chemers et al., 2001), and demographic data questions. Participants were recruited from the psychology and writing departments, the International Studies Department, Multi-Ethnic Programs and through tabling on campus. The Statistical Package for Social Sciences (SPSS) statistical tool was used to analyze participants' THS, ASES scores, and self-reported GPA to answer the three research questions.

A total of 323 undergraduate students participated in the present study and a total of 16 missing values were noted in the three main variable data set. The missing values were replaced using the expectation maximization method due to the small number of random missing values (less than 5% missing values) (Sweet & Martin, 2012). Seven outliers were identified using Hoaglin, Iglewicz and Tukey's (1986) outlier labeling rule, which detects outliers using the interquartile range, were removed, and left a total of $N = 316$.

Among the 316 participants in the study, 26.6% were men, 70.9% were women, 0.6% transgender, 1.3% gender non-conforming/gender fluid, and 0.6% other. The breakdown of participants' class standing was 43.39% freshman, 17.4% sophomores, 16.13% juniors, 19.62% seniors, and 3.16% 5th year and beyond students (see Table 1). The mean age of the participants was 19.88 ($SD = 2.32$); age ranged from 18 to 38 years old.

The breakdown of the ethnic background of participants was 51.6% white/Caucasian, 24.7% Asian, 10.1% Hispanic, 14% African American, 0.3% American-Indian, or 24% other/ mixed. More than half of the participants (65.82%) identified themselves as immigrants (12.65% first generation, 5.06% 1.5 generation, 19.93% second generation, and 28.16% as third generation). Among the immigrant students, 47 countries were represented within the sample. Of the 316-total number of participants, 25% were FGCS and 74.4% were non-FGCS.

Table 1

Demographic Information Based on Preliminary Grouping Analysis

		Frequency	Percent
Gender	Man	84	26.6
	Woman	224	70.9
	Transgender	2	.6
	Gender non-conforming/ gender fluid	4	1.3
	Other	2	.6
	Total	316	100.0
Year	Freshman	137	43.39
	Sophomore	55	17.4
	Junior	51	16.13
	Senior	62	19.62
	5 th year and beyond	10	3.16
	Total	315	99.7
Ethnicity	American Indian or Alaskan Native	4	1.3
	Asian/ Pacific Islander	78	24.7
	Black or African American	14	4.4
	Hispanic	32	10.1
	White/ Caucasian	163	51.6
	Other/ Mixed	24	7.6
	Total	315	99.7
Immigrant	Non-immigrant	108	34.17
	1 st generation	40	12.65
	1.5 generation	16	5.06
	2 nd generation	63	19.93
	3 rd generation	89	28.16
	Total	316	100.0
College	FGCS	79	25.0
Going	Non-FGCS	235	74.4
Status	Total	314	99.4

Parametric Assumptions Testing

Parametric procedure assumptions of normality, homogeneity of variance, variable requirements, and independent observations were examined prior to proceeding to the analysis (see Table 2). Normality was examined through the Shapiro-Wilk's test and failed the test of normality as for most of the variables (see Table 3) however, the other indicators of normality including the histogram, p-p plots, q-q plots, skewness, and kurtosis estimates displayed normal distribution (Field, 2013) (see Figure 2). The skewness and kurtosis were all within the plus two and minus one range for all variables.

Table 2

Descriptive Statistics Between All Participants, FGCS and Non-FGCS

		All participants <i>N</i> = 316	FGCS <i>n</i> = 79	Non- FGCS <i>n</i> = 242
GPA	Mean	3.42	3.23	3.48
	Std. Deviation	.41	.45	.38
	Minimum	2.00	2.00	2.10
	Maximum	4.00	4.00	4.00
	Range	2.00	2.00	1.90
	Skewness	-.92	-.72	-.95
	Kurtosis	.65	.37	.62
THScore	Mean	6.27	5.97	6.38
	Std. Deviation	.94	1.25	.38
	Minimum	2.63	2.63	3.75
	Maximum	8.00	8.00	8.00
	Range	5.38	5.38	4.25
	Skewness	-.10	-.86	-.56
	Kurtosis	1.67	.40	.48
ASEScore	Mean	5.33	5.03	5.44
	Std. Deviation	.85	.925	.80
	Minimum	2.75	2.75	3.25
	Maximum	7.00	7.00	7.00
	Range	4.25	4.25	3.75
	Skewness	-.38	-.17	-.39
	Kurtosis	-.27	-.35	-.27

Table 3

THS, ASES and GPA Tests of Normality

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
GPA	.12	316	.00	.93	316	.00
THScore	.09	316	.00	.94	316	.00
ASEScore	.06	316	.002	.98	316	.001

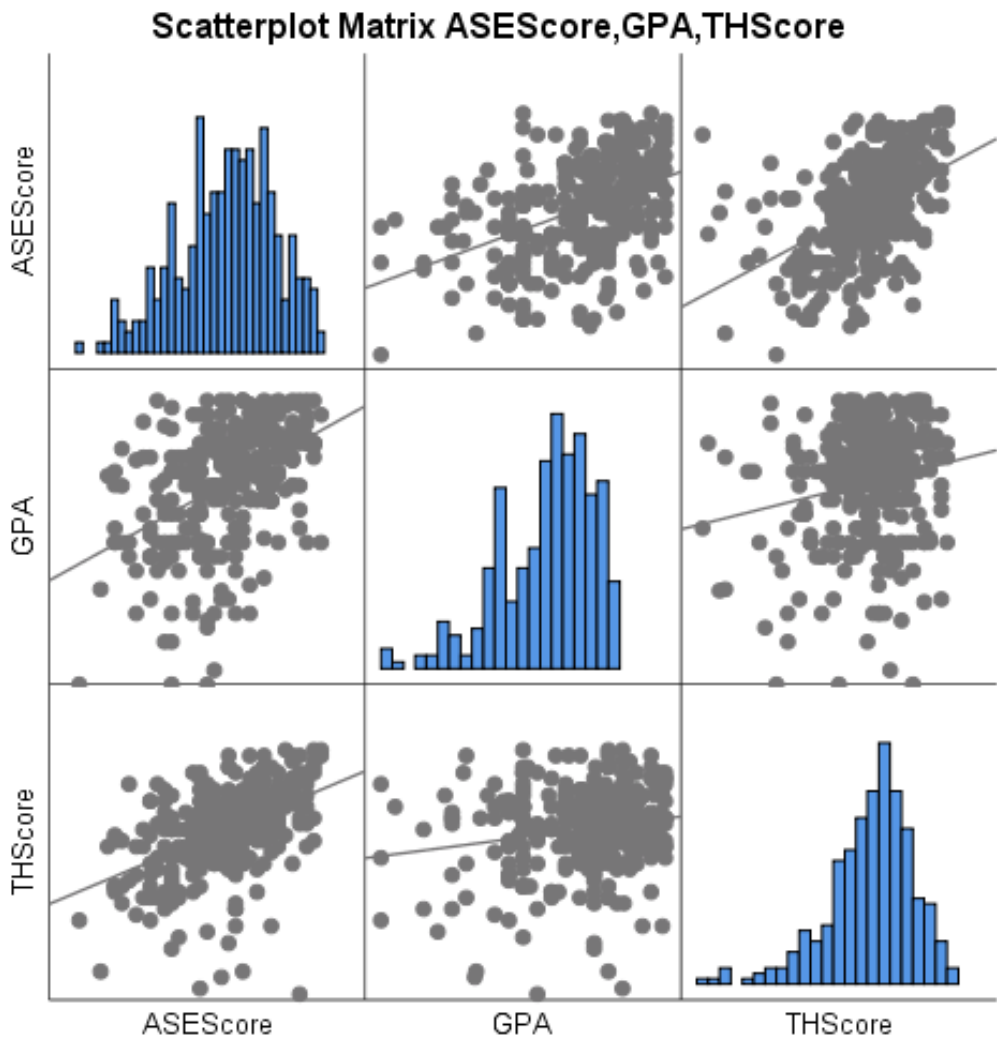


Figure 2. Scatterplot matrix of all three variables.

The assumption of normality in larger samples are less of a concern because of because the central limit theorem, which posits for a larger sample size the estimate will have come from a normal distribution (Field, 2013). In addition, confidence intervals were computed through the bootstrap technique to account for the non-normally distributed data. The bootstrap method is a nonparametric approach that uses resampling to estimate the variance that does not require the same level of adherence to assumptions (Tabachnick & Fidell, 2013).

The homogeneity between groups and variables were assessed through the Levene's test and indicate the level of variance. The variables also met the parametric assumption of a ratio or interval data measurement. Finally, the independent observations of data assumption were satisfied that the value of one variable does not have a significant effect on the value of the other variables (Field, 2013).

Although the data displayed failed the formal the test of normality (Levene's), parametric procedures were chosen because the relatively large sample size and the greater power parametric procedures offers in detecting a genuine effect in the data compared to non-parametric tests (Field, 2013). Other indicators of normality were reviewed for normal distribution prior to the analysis. The results are interpreted with caution due to issues of normality and violation of homogeneity assumptions for some of the variables.

Preliminary Analysis

A preliminary analysis tested for possible ethnic (see Table 4), college-going status and gender differences in all three variables (hope, academic self-efficacy, and self-reported GPA). An independent samples t-test analysis was conducted for ethnic and

college-going status differences. A one-way analysis of variance (ANOVA) was conducted for gender differences for all three variables. The Bonferroni correction was applied in all the preliminary analyses to control for type-1 error.

Table 4

Ethnic Group Independent Samples Test

		Levene's Test		t-test for Equality of Means						
		<i>F</i>	<i>Sig.</i>	<i>t</i>	<i>df</i>	<i>Sig.</i>	Mean Diffe rence	Std. Error Differe nce	95% <i>CI</i>	
									LL	UL
TH Score	Equal variances assumed	3.96	.047	-2.54	314	.013	-2.68	.11	-.47	-.06
	Equal variances not assumed			-2.53	293.86	.012*	-.27	.11	-.47	-.06
ASE Score	Equal variances assumed	.68	.412	-5.52	314	.00*	-.51	.09	-.68	-.32
	Equal variances not assumed			-5.51	308.50	.00	-.51	.09	-.68	-.32
GPA	Equal variances assumed	22.01	.00	-6.89	314	.00	-.30	.04	-.38	-.21
	Equal variances not assumed			-6.82	268.36	.00*	-.30	.04	-.39	-.21

Note. *CI* = confidence interval; LL = lower limit; UL = upper limit; *Sig* = (two-tailed test); **Sig* < .016 Bonferroni correction.

Assumptions were assessed prior to the independent samples *t*-test testing for ethnic differences among the variables. The Levene's test indicates the variance was

similar throughout the data for academic self-efficacy variable $F(1, 314) = 0.68, p = .41$, however, the self-reported GPA, $F(1, 314) = 22.01, p < .001$, and trait hope $F(1, 314) = 3.96, p = .04$ variables did not meet the assumption. The bias corrected bootstrapped confidence intervals were used to determine the genuine effect on the population for all variables in the groups that did not cross zero. Normality within groups were examined with a split file for non-white and white/Caucasian groups and displayed skewness and kurtosis within the minus 1.5 and plus 1.5 range for all three variables (see Table 5).

Table 5

Ethnic Group Descriptive Statistics

	Status	<i>N</i>	Skewness	Kurtosis	<i>M</i>	<i>SD</i>	Std. Error Mean
THScore	Non-white	152	-1.00	1.49	6.14	1.03	.08
	White/Caucasian	162	-.72	.88	6.41	.84	.06
ASEScore	Non-white	153	-.26	-.25	5.08	.84	.06
	White/Caucasian	163	-.48	-.18	5.59	.78	.06
GPA	Non-white	153	-.65	.03	3.27	.45	.03
	White/Caucasian	163	-.76	-.05	3.56	.31	.02

The independent samples t-test results showed significant differences in all three variables and ethnicity, with a trend that white/Caucasian participants reported higher hope, academic self-efficacy, and self-reported GPA. There were statistically significant differences in trait hope between non-white participants ($M = 6.14, SE = 0.08$), and

white/Caucasian participants ($M = 6.41$, $SE = 0.06$), [BC] 95% CI [-.47, -.06], $t(314) = -2.53$, $p = .012$, and represents a small effect size, Hedges' $g = 0.27$.

Similarly, white/Caucasian participants had significantly higher academic self-efficacy scores ($M = 5.59$, $SE = 0.061$), than non-white participants ($M = 5.08$, $SE = 0.06$) [BC] 95% CI [-.68, -.32], $t(314) = -5.51$, $p < .001$ with a medium effect size, Hedges' $g = -0.62$. Finally, self-reported GPA differed based on ethnicity as well, but since the groups were unequal in variance, Welch's tests of equality of means was observed through the 'equal variances not assumed'. Again, there was a statistically significant difference between ethnically white/Caucasian participants and non-white participants.

White/Caucasian participants had higher academic self-reported GPA scores ($M = 3.57$, $SE = 0.024$) than non-white participants ($M = 3.27$, $SE = 0.03$), [BC] 95% CI [-0.39, -0.21], $t(314) = -6.82$, $p < .001$, and represents a large effect size (Hedges' $g = -0.77$).

College-going status analysis between variables. Variable differences in college-going status were examined next. An independent samples t -test was chosen as the method of analysis due to the categorical nature of class college-going status (FGCS and non-FGCS) and comparing the mean hope scores of the two groups (see Table 6) (Field, 2013). The assumptions of parametric statistics were checked: adequate sample size, and interval or ratio data requirements. The data was examined for outliers, normality, and homogeneity in the preliminary analysis.

Table 6

College-Going Status Independent Samples Test

		Levene's Test		t-test for Equality of Means						
		<i>F</i>	<i>Sig.</i>	<i>t</i>	<i>df</i>	<i>Sig.</i>	Mean Differ ence	Std. Error Differ ence	95% <i>CI</i>	
									LL	UL
ASE Score	Equal variances assumed	2.49	.115	-3.74	312	.000*	-.41	.11	-.62	-.19
	Equal variances not assumed			-3.49	120.24	.001	-.41	.12	-.63	-.17
GPA	Equal variances assumed	4.89	.028	-4.67	312	.000	-.25	.05	-.35	-.14
	Equal variances not assumed			-4.31	118.17	.000*	-.25	.06	-.36	-.13
TH Score	Equal variances assumed	23.89	.000	-3.39	312	.002	-.41	.12	-.64	-.17
	Equal variances not assumed			-2.72	99.47	.008*	-.41	.15	-.70	-.11

Note. CI = confidence interval; LL = lower limit; UL = upper limit; Sig = (two-tailed test); *Sig < .016 Bonferroni correction

The homogeneity of variance was assessed by Levene's test for all three variables, and academic self-efficacy variable met the assumption of equality of variance, $F(1, 312) = 2.49, p = .11$; however, self-reported GPA, $F(1, 312) = 4.89, p = .02$ and the hope variable did not meet the assumption, $F(1, 312) = 23.89, p < .001$. Welch's tests of equality of means was observed through the "equal variances not assumed" section to

interpret the t-test results for the two variables that did not show homogeneity of variance. The bias corrected bootstrapped confidence intervals were used to determine the genuine effect on the population for all variables in the groups that did not cross zero. Normality within groups were examined with a split file for FGCS and non-FGCS groups and displayed skewness and kurtosis within the minus one and plus one range for all three variables (see Table 7).

Table 7

College-Going Status Group Descriptive Statistics

	Status	<i>N</i>	Skewness	Kurtosis	<i>M</i>	<i>SD</i>	Std. Error Mean
ASEScore	FGCS	79	-.17	-.35	5.04	9.25	.10
	Non-FGCS	235	-.39	-.27	5.45	.80	.05
GPA	FGCS	79	-.72	.37	3.24	.45	.05
	Non-FGCS	235	-.95	.62	3.48	.38	.02
THScore	FGCS	79	-.86	.40	5.97	1.25	.14
	Non-FGCS	235	-.52	.34	6.38	.79	.05

The results showed significant differences in all three variables and college-going status, with a trend that non-FGCS participants reported higher hope, academic self-efficacy, and self-reported GPA. Findings show non-FGCS participants had significantly higher hope levels ($M = 6.38, SE = .05$) than FGCS participants ($M = 5.97, SE = .14$), $t(312) = -2.72, p = .008, [BC] 95\% CI [-.70, -0.11]$. An effect size was calculated through Hedges' $g = -0.46$, which represents a small effect size (Field, 2013).

Similar results were observed for academic self-efficacy; non-FGCS participants had significantly higher academic self-efficacy scores ($M = 5.45$, $SE = 0.05$) than FGCS participants ($M = 5.04$, $SE = .10$) [BC] $95\% CI [-.62, -.19]$, $t(312) = -3.74$, $p < .001$; it represents a small effect size, Hedges' $g = -0.10$. Finally, non-FGCS participants had significantly higher academic self-reported GPA scores ($M = 3.48$, $SE = 0.03$) than FGCS participants ($M = 3.23$, $SE = 0.05$) [BC] $95\% CI [-0.36, -0.13]$, $t(311) = -4.31$, $p < .001$; a Hedges' $g = -0.59$ revealed a medium effect size. These findings support the hypothesis that college-going status is an important factor in hope, academic self-efficacy and GPA.

Gender analysis between variables. The final preliminary analysis conducted was a one-way ANOVA to compare the effect of gender on the variables hope, academic self-efficacy, and self-reported GPA (see Table 8). Participants' academic self-efficacy was the only variable that had a statistically significant effect of based on gender, $F(4, 311) = 6.41$, $p < .001$.

Table 8

ANOVA: Tests the Effect of Gender on Variables

		Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>Sig.</i>
THScore	Between Groups	1.68	4	.42	.46	.75
	Within Groups	280.11	311	.90		
	Total	281.80	315			
ASEScore	Between Groups	17.54	4	4.38	6.41	.00
	Within Groups	212.61	311	.68		
	Total	230.15	315			
GPA	Between Groups	1.34	4	.33	1.94	.10
	Within Groups	53.80	311	.17		
	Total	55.15	315			

Specifically, a Hochberg's GT2 post hoc procedure was used to account for the difference in sample sizes. Hochberg's post hoc test revealed that men were statistically significantly lower in academic self-efficacy (-.40) ($p = 0.002$) compared to women (see Table 9). The only groups that have significantly different means were between men and women. The eta squared (η^2) was used to calculate the effect size and the variance accounted for over total variance. The effect size for the group differences was a medium effect size, $\eta^2 = .27$. The sample sizes for 'other' ($n = 2$), transgender ($n = 2$), and gender non-conforming/gender fluid ($n = 4$) were small and the results were noted and interpreted with caution.

Table 9

Hochberg Post-Hoc Test for ASEScore Multiple Comparisons

(I) Gender	(J) Gender	Mean		Sig.	95% CI	
		Difference (I-J)	Std. Error		LL	UL
Man	Woman	-.40*	.10	.002	-.70	-.10
	Transgender	.98	.59	.63	-.68	2.65
	Non-conforming	-1.71	.42	1.00	-1.36	1.02
	Other	-1.76	.59	.03	-3.43	-.09
Woman	Man	.40*	.10	.00	-.10	.70
	Transgender	1.38	.58	.17	-.26	3.04
	Non-conforming	.23	.41	1.00	-.94	1.40
	Other	-1.36	.58	.19	-3.01	.29
Transgender	Man	-.98	.59	.63	-2.65	.68
	Woman	-1.38	.58	.17	-3.04	.26
	Non-conforming	-1.15	.71	.67	-3.17	.86
	Other	-2.75	.82	.01	-5.08	-.41
Non-conforming	Man	.17	.42	1.00	-1.02	1.36
	Woman	-.23	.41	1.00	-1.40	.94
	Transgender	1.15	.71	.67	-.86	3.17
	Other	-1.59	.71	.23	-3.61	.42
Other	Man	1.76	.59	.03	.09	3.43
	Woman	1.36	.58	.19	-.29	3.01
	Transgender	2.75	.82	.01	.41	5.08
	Non-conforming	1.59	.71	.23	-.42	3.61

Note. CI = confidence interval; LL = lower limit; UL = upper limit; Sig < .010

Bonferroni correction to control for type-1 error.

Research Question One

1. What are the correlations between trait hope, academic self-efficacy, and academic achievement among college students, as reflected in their self-reported level of trait hope, academic self-efficacy and GPA among college student?

H0: There are no statistically significant correlations between trait hope, academic

self-efficacy, and academic achievement among college students, as reflected in their trait hope, academic self-efficacy and self-reported GPA.

H₁: There are statistically significant correlations between trait hope, academic self-efficacy, and academic achievement among college students, as reflected in their self-reported trait hope, academic self-efficacy and self-reported GPA.

A bivariate Pearson correlational analysis was used to answer research question one, which sought to describe the relationship between the trait hope, academic self-efficacy, and self-reported cumulative GPA (Vogt & Johnson, 2011). A correlation was chosen as the research method because the purpose of the research study is to measure the variables in relation to one another without manipulation. A two-tailed test was chosen because of the non-directional hypothesis of research questions one.

The assumptions within a Pearson's correlation were reviewed and met prior to the data analysis. The variables trait hope, self-reported GPA, and academic self-efficacy are either interval or ratio measurements and meet the requirement of parametric tests. The descriptive statistics were reviewed to check for homoscedasticity, linearity, and normality of data. The Shapiro-Wilk test shows the groups are not normally distributed, however, the histogram and q-q plots were observed for normality. The skewness and kurtosis were within the plus two and minus two range (see Table 10). A linear relationship and homoscedasticity were observed between the variables.

Once the descriptive statistics (graphs, scatterplots, q-q/p-p plots, and histograms) indicated the assumptions of a Pearson's correlation were met, a simple regression analysis was conducted in SPSS. The test for significance was set at an alpha of .01 and

degrees of freedom equal to $N-2$. Strength of association 0.1-0.3 is considered small, 0.3-0.5 is considered medium and 0.5-1.0 is considered large (Field, 2013).

Table 10

Descriptive Statistics of Variables Between All Participants

	Minimum Statistic	Maximum Statistic	Mean Statistic	Std.	Skewness Statistic	SE	Kurtosis	
				Deviation Statistic			Statistic	SE
GPA	2.00	4.00	3.42	.41	-.92	.13	.65	.27
THScore	2.63	8	6.27	.94	-1.002	.13	1.67	.27
ASEScore	2.75	7	5.33	.85	-.38	.13	-.27	.27

Note. SE = Standard error.

The significance values were set to be less than .01 as reported in the alpha level. The p -value indicates the probability of getting a correlation coefficient in a sample of 316 people if the null hypothesis were true is very low. The results of the Pearson's correlation show a statistically significant correlation between all three variables. Trait hope and academic self-efficacy are moderately correlated ($r = .47, p < .001$), trait hope and self-reported GPA share a small correlation, ($r = .17, p = .001$) and finally, academic self-efficacy and self-reported GPA have a moderate correlation ($r = .45, p < .001$) (see Table 11).

Table 11

Correlations Between Variables Between All Participants

		GPA	THScore	ASEScore
GPA	Pearson Correlation	1	.17**	.45**
	<i>Sig. (2-tailed)</i>		.001	.00
	<i>N</i>	316	316	316
TH Score	Pearson Correlation	.17**	1	.47**
	<i>Sig. (2-tailed)</i>	.001		.00
	<i>N</i>	316	316	316
ASE Score	Pearson Correlation	.45**	.47**	1
	<i>Sig. (2-tailed)</i>	.00	.00	
	<i>N</i>	316	316	316

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

The coefficient of determination (R^2) between academic trait hope and academic self-efficacy was calculated, and the R^2 was .22, indicating trait hope accounts for 22.3% of the variation in academic self-efficacy. Next, trait hope and self-reported GPA yielded an R^2 of .03, which indicates trait hope accounts for 3% of the variation in academic achievement (self-reported GPA). The coefficient of determination (R^2) between trait hope and GPA was less than the R^2 between academic self-efficacy and GPA. Finally, academic self-efficacy and self-reported GPA share a R^2 value of .20, which accounts for 20% of the variation.

Based on the results of Pearson's correlation analysis, the null hypothesis was rejected that there are no statistically significant correlations between trait hope,

academic self-efficacy, and academic achievement among college students, as reflected in their self-reported GPA. The nondirectional alternative hypothesis that there are statistically significant correlations between trait hope, academic self-efficacy, and academic achievement among college students was supported. Overall, a positive relationship was found between trait hope, academic self-efficacy and self-reported cumulative GPA, in the present study.

Research Question Two

2. Which factor- agency or pathway- of trait hope, as measured by the agency subscale and the pathways subscale, would be a stronger predictor of academic achievement among college students, as measured by their self-reported GPA?

H₀: There is no difference between the strength of the agency factor and the pathways factor in predicting academic achievement among college students.

H₁: There is a difference between the strength of the agency factor and the pathways factor in predicting academic achievement among college students.

A hierarchical regression analysis is used to determine if an outcome is predicted by a linear combination of two or more predictor variables (Vogt & Johnson, 2011). For research question two, a hierarchical method of regression analysis was used for the trait hope subscales agency and pathways, as the predictor variables and self-reported GPA as the outcome variable. Agency and pathways factors are continuous variables and the outcome variable is a continuous variable which meets the standard regression analysis assumptions (Vogt & Johnson, 2011).

Hierarchical regression assumptions were reviewed for linear relationship between the outcome and predictor variables, multicollinearity was assessed through the

VIF, tolerance statistic and correlation matrix ($r > .8$). Normality assumptions were not met, as shown through the significant Shapiro-Wilk's test, but was accounted for with the bootstrap method (see Table 12). The dependent variable, GPA was not normally distributed as observed from a significant Levene's test (see Table 12).

Table 12

Agency, Pathways and GPA Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pathways	.10	316	.000	.95	316	.000
Agency	.11	316	.000	.93	316	.000

a. Lilliefors Significance Correction

Based on the *Pearson correlation matrix* (see Table 13), the predictor variables, pathways and agency, share a positive correlation ($r = .63, p < .01$), but were not overly correlated ($r > .8$), which reduces the risk of multicollinearity (Field, 2013). Both agency and pathways were positively correlated with GPA however, agency was significantly correlated to GPA ($r = .27, p < .01$), while pathways was not significantly correlated to GPA ($r = .03, p = .25$), therefore agency was likely to best predict GPA.

Table 13

Pearson Correlation Matrix

Variables	1. GPA	2. Pathways	3. Agency
1.	-	.03	.27**
2.	-	-	.25
3.	-	-	-

** significant at .01 level

The regression analysis yields a multiple correlation coefficient R , which describes the relationships between the outcome and predictor variables. The coefficient of determination R^2 expresses the amount of variance in the outcome variable that is explained by the model. Model 1 included pathways as the only predictor, while model 2 included both pathways and agency as predictors (see Table 14).

Table 14

Model Summary

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate	Change Statistics					
					R^2 Change	F Change	$df1$	$df2$	Sig. F Change	Durbin-Watson
1	.03 ^a	.001	-.00	.41	.001	.44	1	314	.50	
2	.33 ^b	.10	.10	.39	.10	37.90	1	313	.00	2.006

a. Predictors: (Constant), Pathways

b. Predictors: (Constant), Pathways, Agency

Model 1 reported a multiple correlation coefficient R statistic = .03 between pathways and self-reported GPA. The R^2 showed that pathways accounted for .1% (.001)

of the variation in self-reported GPA. Overall, pathways as a predictor did not explain a significant amount of variance in self-reported GPA, $F(1, 314) = .44, p = .50, R^2 = .001, R^2_{Adjusted} = -.002$. Model 2 reported statistical significance after agency was added as a predictor, which indicated agency accounts for a significant amount of variance above and beyond pathways, $F(2, 313) = 37.90, p < .001, R = .33, R^2 = .10, R^2_{Adjusted} = .10$. An increase of R^2 of .10 in the percent of variance accounted for as observed from the R^2 Change, was statistically significant, meaning agency was added to the model, it increased the model's predictive capacity in a statistically significant way and increased the percent of variance accounted for by 10%.

The Durbin-Watson statistic score of 2.00 was between 1 and 3 and therefore shows the errors are independent (Field, 2013). In addition, the ANOVA indicated model 1 was not a significant fit of the overall data ($p = .50$), however, model 2 was a significant fit of the data overall ($p < .001$), which can be interpreted that agency accounted for a significant amount of variance above and beyond pathways (see Table 15).

Table 15

ANOVA^a: Tests the Significance of the Models

Model		Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>Sig.</i>
1	Regression	.07	1	.07	.44	.506 ^b
	Residual	55.07	314	.17		
	Total	55.15	315			
2	Regression	6.02	2	3.01	19.20	.000 ^c
	Residual	49.12	313	.15		
	Total	55.15	315			

a. Dependent Variable: GPA

b. Predictors: (Constant), Pathways

c. Predictors: (Constant), Pathways, Agency

The standardized beta values in the *Coefficients* table reported the individual contribution of variables in the regression model (see Table 16). For model 2, the pathways $t(313) = -3.36, p = .001$ and agency $t(313) = 6.15, p < .001$ were both significant predictors of self-reported GPA. However, since agency had a bigger impact on GPA, based on the larger t-statistic (6.15), and was a statically significant predictor of self-reported GPA. Each predictor variable was assigned a standardized beta value (i.e., their slopes) that determined which factor was a stronger predictor of the self-reported GPA (the outcome). Agency (*standardized* $\beta = .42$) was a stronger predictor in self-reported GPA than pathways (*standardized* $\beta = -.23$) based on the larger absolute standardized beta values.

Table 16

Coefficients: Model Parameter for Both Steps in Hierarchy

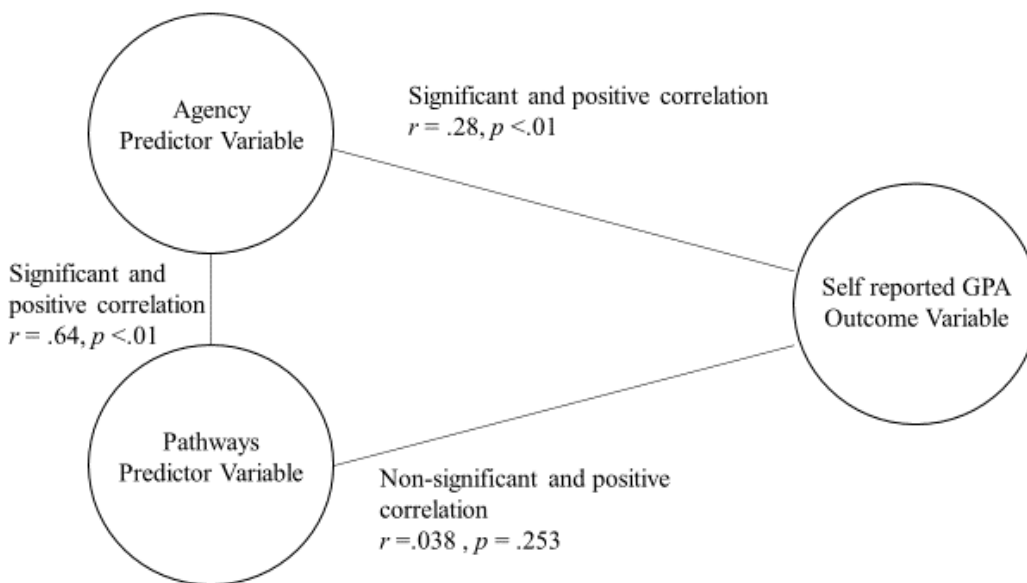
Model		Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	<i>Sig.</i>	95% <i>CI</i>	
		<i>B</i>	Error Std.	Beta			LL	UL
1	(Constant)	3.32	.14		22.75	.000	3.03	3.61
	Pathways	.01	.02	.03	.66	.506	-.03	.06
2	(Constant)	2.96	.15		19.79	.000	2.67	3.26
	Pathways	-.09	.02	-.23	-3.36	.001	-.15	-.04
	Agency	.16	.02	.42	6.15	.000	.11	.21

Note. CI = confidence interval; LL = lower limit; UL = upper limit.

Overall, the null hypothesis that there is no difference between the strength of the agency factor and the pathways factor in predicting academic achievement was rejected. The non-directional alternative hypothesis that there is a difference between the strength of the agency factor and the pathways factor in predicting academic achievement among college students was supported based on the findings from the hierarchical regression.

Theoretically, it was an unexpected finding that pathways had a negative relationship with academic achievement, because pathways is an individual's sense of being able to generate successful plans to achieve the set goals, which is believed to positively impact academic achievement based on past research (Day et al., 2010; Snyder, et al., 1991). Model 1 from the coefficients table indicated the pathways subscale has a *b* value of .01, which was not significant, $t(314) = .66, p = .50$; the confidence interval crosses zero, [BC] 95% *CI* [-.03, .06].

However, in model 2, when the agency subscale was added to the model, the pathways subscale changed from $b = .015$ to $b = -.09$. The pathways subscale displayed a suppression effect in the negative b value which says as pathways decreases, academic achievement increases by $-.09$ units. This interpretation is counterintuitive and was only true when the effects of agency were held constant. Based on the non-significant Pearson's correlation between pathways and academic achievement, a strong, positive correlation between the predictors, and a negative $R^2_{Adjusted} = -.002$, in the model summary, a suppression effect was suspected (see Figure 3).



Model 1 (pathways): $F(1,314) = .443, p = .506, R^2 = .001, R^2_{Adjusted} = -.002$

Model 2 (pathways & agency): $F(2,313) = 37.905, p < .001, R = .331, R^2 = .109, R^2_{Adjusted} = .104$.

Figure 3. Correlations between predictor and outcome variables as well as model comparisons.

The findings from the analysis of regression followed the indicators of a suppression effect. The predictor variables were significantly and positively correlated with one another, and one of the predictors, (agency) was significantly and positively

correlated with the outcome variable, while pathways was positively, yet not significantly correlated to the outcome variable. Pathways, as the suspected suppressor, has a significant and negative correlation to the outcome variable as shown through the beta value (standardized $\beta = -.23$). In addition, the sum of squared semi-partial, which explains the unique contribution of the predictor variable to the outcome variable, also yielded a greater score than the R^2 from model 2, which supports pathways was a suppressor that artificially inflates the R^2 (.11 > .10).

The Variance Inflation Factor (VIF) was reviewed to measure the collinearity to determine the tolerance. Tolerance statistics and the VIF indicates whether the predictor variables are strongly correlated (see Table 17). The tolerance for model 2 was above a 0.1 (.62) and did not indicate a serious problem (Field, 2013). The largest VIF was less than 10, which reduced the probability for multicollinearity, however, was greater than 1 (1.60), which suggested some over correlations between the variables (Field, 2013).

Table 17

Excluded Variables

Model	Beta	<i>t</i>	Sig.	Partial Correlation	Collinearity Statistics			
					Tolerance	VIF	Minimum Tolerance	
1	Agency	.42 ^b	6.22	.000	.33	.62	1.60	.62

a. Dependent Variable: GPA

b. Predictors in the Model: (Constant), Pathways

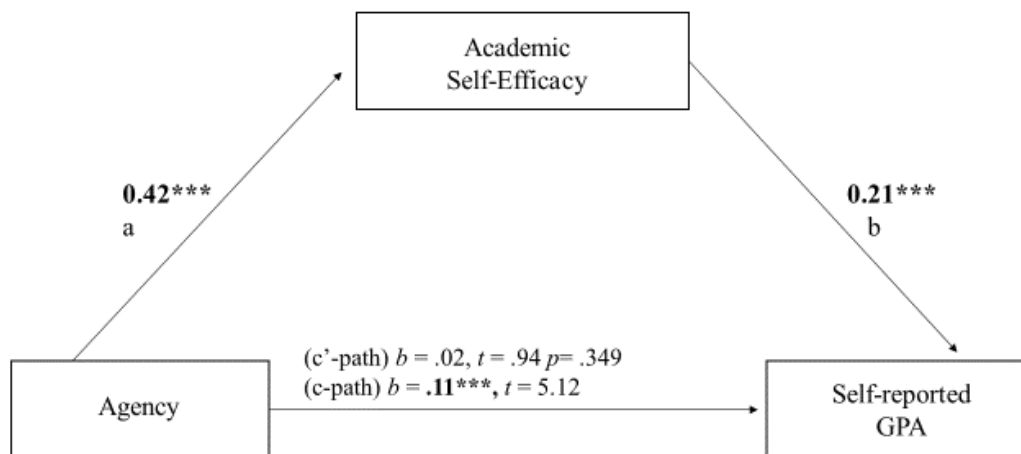
Research Question Three

3. Does academic self-efficacy mediate the relationship between agency and academic achievement?

*H*₀: Academic self-efficacy does not mediate the relationship between agency and academic achievement.

*H*₁: Agency will significantly and positively predict academic self-efficacy, which in turn would significantly and positively predict academic achievement as reflected in self-reported GPA.

A mediation analysis was utilized through Hayes (2004) SPSS PROCESS v3.3 tool to assess the size of the indirect effect using bootstrapped estimates and 95% bias-corrected (BC) and its confidence interval (CI) (Hayes & Preacher, 2004). The results determined the relationship between agency and self-reported GPA (outcome variable), and the indirect effect of academic self-efficacy as the mediator (see Figure 4). The total effect of the agency as a predictor to self-reported GPA when the mediator was not present in the model was statistically significant, $b = .11$, $t(314) = 5.12$, $p < .001$, [BC] 95% CI [.06, .14], $F(1, 31) = 26.19$, $p < .001$, $R^2 = .07$. The R^2 revealed the model explains 7.7% of the variance in academic achievement.



Indirect effect, $b = .09$, 95% CI [.056, .123].

Figure 4. Standardized regression coefficients from the mediation model testing the effects of agency on academic achievement through academic self-efficacy
 *** $p < .001$. C'-path= direct effect of agency on self-reported GPA controlling for academic self-efficacy. C-path = total effect of agency on self-reported GPA.

Agency also significantly predicted the mediator, academic self-efficacy, $path a = .41, t(314) = 10.93, p < .001, F(1, 314) = 119.52, p < .001, [BC] 95\% CI [.34, .49], R^2 = .27$, which value tells us that agency explained 27.6% of the variance in academic self-efficacy. The positive b -value indicated a positive relationship between agency and academic self-efficacy, meaning as agency increased, academic self-efficacy also increased.

Similarly, academic self-efficacy also significantly predicted GPA, $path b = .21, t(313) = 7.15, p < .001 [BC] 95\% CI [.15, .26]$, and the positive b for academic self-efficacy indicated that as academic self-efficacy increases, GPA increases. The direct effect of agency on GPA when academic self-efficacy is included as predictor was non-significant in the c' path, based on the confidence interval crossing zero and the p -value being greater than .05, $b = .02, t(313) = .94, p = .34, [BC] 95\% CI [-.02, .06]$. The

strength of agency was increased when academic self-efficacy was included as a predictor, which means academic self-efficacy changed the relationship between agency and self-reported GPA.

Finally, the indirect effect of agency on academic achievement, $b = 0.09$; [BC] 95% CI [.05, .12] indicated a likely genuine indirect effect, as the bias-corrected confidence interval did not cross zero. The added mediation in the model explained the relationship between agency and academic achievement. The indirect effect of agency on GPA when academic self-efficacy was included in the model was statistically significant, $F(2, 313) = 40.72, p < .001, R^2 = .20$, which indicated that agency and academic self-efficacy explain 20% of the variance in academic achievement.

Overall, the mediation analysis revealed an increase in agency was linked to increased academic self-efficacy, which in turn was linked with higher self-reported GPA. Academic self-efficacy was a significant and a complete mediator in the relationship between agency and academic achievement, which supports the alternative hypothesis and rejects the null hypothesis that academic self-efficacy does not mediate the relationship between agency and academic achievement. When academic self-efficacy was included in the model, the direct effect of agency was no longer a significant predictor, which is what would be expected in a mediation.

Both academic self-efficacy and agency significantly predict self-reported GPA when analyzed separately. However, academic self-efficacy was a stronger predictor of self-reported GPA based on the higher t -statistic $b = .21, t = 7.15, p < .001$, [BC] 95% CI [.15, .26], compared to agency $b = .11, t = 5.12, p < .001$, [BC] 95% CI [.06, .14]. Correlation analysis also supports this finding in that academic self-efficacy also has a

stronger correlation to GPA ($r = .45, p < .01$) and was a better predictor of GPA compared to agency ($r = .22, p < .01$).

Summary of Results

The preliminary analysis was congruent with previous research that FGCS have fewer resources and lower support to succeed in college based on the variables hope, academic self-efficacy and academic achievement in the present study (Cataldi et al., 2018; Ishitani, 2006; McDonough, 1997). The independent samples t-test showed that FGCS had statistically lower in hope levels, $t(312) = -2.72, p = .008$, [BC] 95% CI [-.70, -.11], academic achievement, $t(311) = -4.31, p < .001$, [BC] 95% CI [-0.36, -0.13], and academic self-efficacy, $t(312) = -3.74, p < .001$, [BC] 95% CI [-.62, -.19] compared to non-FGCS. In addition, non-white participants had similar trends to FGCS; they score lower in hope, academic self-efficacy, and self-reported GPA compared to white/Caucasian participants. Men were also significantly lower in academic self-efficacy compared to women. A follow-up Chi-square test of independence calculated college-going status between men and women yielded a non-significant interaction between gender (men and women) and college-going status ($\chi^2(1) = .02, p = .86$).

The correlation analysis from research questions one was consistent with the past literature in that academic self-efficacy and hope were both positively correlated with academic achievement. However, academic self-efficacy had a stronger positive correlation with academic achievement, $r = .45, p < .001$, than hope, $r = .17, p = .001$. Trait hope and academic self-efficacy are moderately correlated, $r = .47$, but were not in risk of collinearity ($r < 0.8$). Hope was expected to be more strongly correlated to academic achievement than academic self-efficacy based on past research (Feldman &

Kubota, 2015; Gallagher et al., 2017), however, the present study did not support that finding. The other variables such as academic specific hope and general self-efficacy were not included to make a comprehensive comparison to Feldman and Kubota's (2015) previous research. Academic self-efficacy and hope are rooted in the same construct of positive psychology and were anticipated to overlap. The Pearson's correlation between academic self-efficacy and hope results support this prediction, $r = .45, p < .001$.

Past research highlights the agency subscale as being a stronger predictor of academic achievement compared to the pathways subscale (Feldman et al., 2009). The finding was supported through the regression analysis which revealed the agency subscale had a stronger contribution to the regression model observed by the larger beta value. The agency predictor (*standardized* $\beta = .42$) was a stronger predictor in GPA based on the standardized beta values than pathways (*standardized* $\beta = -.22$). A hierarchical regression was conducted and revealed pathways does not explain a significant amount of variance in self-reported GPA, $F(1, 314) = .42, p = .51, R^2 = .001, R^2_{Adjusted} = -.002$, however agency accounted for a significant amount of variance above and beyond pathways, $F(2, 313) = .38.69, p < .001, R = .33, R^2 = .11, R^2_{Adjusted} = .10$. The pathways predictor was a suppressor variable based on the negative adjusted R^2 , lack of relationship with the outcome variable and the significant and positive relationship with agency.

Overall, the mediation analysis revealed that academic self-efficacy fully mediated the relationship between agency and academic achievement $b = .09$, [BC] 95% CI [.05, .12]. Academic self-efficacy as the mediator explained approximately 13% of the total influence between hope to academic achievement. Specifically, the positive b value

indicated that an increase in agency was linked to increased academic self-efficacy, which in turn was associated with higher self-reported GPA.

Chapter Five

Discussion and Recommendations for Research and Practice

First-generation college students often face more difficulties in achieving academic success in post-secondary education settings compared to non-FGCS (Cataldi et al., 2018; Chen & Carroll, 2005; Ishitani, 2006). FGCS report overall lower academic preparedness through lower grades in college, lower rates of continuous enrollment, fewer credits enrolled, lower rates of persistence in college, prolonged time to graduate when compared to non-FGCS (Chen & Carroll, 2005; Ishitani, 2006). FGCS are 8.5 times more likely to depart from college, with the risk of departure being highest in the second year in college (Ishitani, 2006). Based on FGCS risk factors, hope was explored as a potential protective factor among FGCS and academic achievement.

Past research has demonstrated positive links between hope and academic achievement (cumulative GPAs, graduation rates, and reduced risk of dropping out), which make hope a strong potential protective factor for FGCS who are at risk of failure in post-secondary education settings (Day et al., 2010; Gallagher et al., 2017; Snyder et al., 2002b). Trait hope, academic self-efficacy, and academic achievement, captured through self-reported GPA, were explored in the present study to investigate the roles of hope and academic self-efficacy academic achievement among FGCS and non-FGCS.

Self-efficacy is a positive internal factor that shares similar properties with hope and has been examined previously in relation to hope to determine the distinct impact within academic settings (Feldman & Kubota, 2015; Gallagher et al., 2017; Snyder et al., 2002b). Hope measures an individual's self-belief in goal pursuits while self-efficacy measures an individual's capacity to meet goals in a specific context (Bandura, 1977;

Snyder et al., 1991; Snyder & Lopez, 2005). For the purposes of this study, ASES (Chemers et al., 2011) was utilized, and compared to trait hope and academic achievement.

Summary of Findings

The three research questions were created to investigate group differences between FGCS and non-FGCS among the main variables of interest: hope, academic self-efficacy, and academic achievement. The first research question sought to examine the relationship between the main variables hope, academic self-efficacy, and academic achievement (self-reported cumulative GPA) through a Pearson correlation analysis. Both academic self-efficacy and hope were significantly correlated with academic achievement, however academic self-efficacy ($r = .45, p < .001$) had a stronger relationship with academic achievement compared to hope ($r = .17, p = .001$). This finding was unexpected in that hope was predicted to be more highly correlated with academic achievement based on previous research (Feldman & Kubota, 2015; Gallagher et al., 2017).

The second research question examined the two THS subscales, agency and pathways, to determine if one was a stronger predictor of self-reported GPA. A hierarchical regression analysis revealed the pathways subscale on its own was non-significant, $F(1, 314) = .44, p = .50, R^2 = .001, R^2_{Adjusted} = -.002$. However, when agency is added as a predictor, it reaches statistical significance, $F(2, 313) = 19.20, p < .001, R = .33, R^2 = .10, R^2_{Adjusted} = .10$. The agency subscale (*standardized* $\beta = .42$) was a stronger predictor of GPA than the pathways subscale (*standardized* $\beta = -.23$), however, a suppression effect was suspected based on the negative beta value.

Finally, research question three used Hayes' PROCESS mediation analysis to test whether academic self-efficacy mediates the relationship between agency and academic achievement. The results indicate that academic self-efficacy mediates the relationship between agency and academic achievement, $b = .09$, [BC] 95% CI [.05, .12]. This finding can be interpreted to mean that as agency increases, academic self-efficacy also increases, which in turn is associated with higher self-reported GPA and vice versa. Overall, agency and academic self-efficacy explain 20% of the variance in academic achievement, as observed from the R^2 value.

The results from this study suggest that hope may not be as strongly associated with academic achievement as previous research demonstrated (Day et al., 2010; Feldman & Kubota, 2015; Gallagher et al., 2017; Snyder et al., 2002b; Snyder et al., 2003). This recent finding is highlighted when considering the additional findings (from the present study) that academic self-efficacy is more strongly related to academic achievement than hope. However, academic self-efficacy's stronger correlation to academic achievement may be due to ASES measurement of individuals' specific academic capacities, while trait hope measures individual's general belief in goal pursuits in relation to academic achievement.

Discussion

The implications in theory and practice based on the results from the present study are discussed below. The research findings and statistical data analysis of each research question and corresponding hypothesis are organized in order from one to three. The findings were varied in their consistency and variability from previous literature.

The results from the present study support previous literature in that FGCS face academic challenges (lower GPA) and lower internal resources (hope and academic self-efficacy) to succeed academically in higher education. The results reiterate that FGCS are more at-risk to fail in post-secondary settings when compared with non-FGCS. Even though FGCS are more at-risk, the positive internal factors of hope and academic self-efficacy contribute to academic achievement.

The preliminary analysis sought to tease out possible group differences among ethnicity, college-going status (FGCS vs non-FGCS) and gender and variables. First, an independent samples t-test was conducted to examine mean differences in THS, ASES and self-reported GPA between white/Caucasian and non-white participants, then another independent samples t-test followed looking at group differences between FGCS and non-FGCS (grouping variables) and all three main variables. Finally, an ANOVA multi-group analysis sought gender differences among the same three variables. A Bonferroni correction was applied (lowered alpha level .01) to control for type-1 error.

The findings indicate non-white participants had significantly lower hope, $t(314) = -2.53, p = .01, [BC] 95\% CI [-.47, -.06], g = 0.27$, academic self-efficacy, $t(314) = -5.51, p < .001, [BC] 95\% CI [-.68, -.32], g = -0.62$, and self-reported GPA $t(314) = -6.82, p < .001, [BC] 95\% CI [-0.39, -0.21], g = -0.77$, compared to white/Caucasian participants. Similarly, there were statistically significant differences in hope, $t(312) = -2.72, p = .008, [BC] 95\% CI [-.70, -.11], g = -0.46$, academic self-efficacy, $t(312) = -3.74, p < .001, [BC] 95\% CI [-.62, -.19], g = -0.10$, and self-reported GPA, $t(311) = -4.31, p < .001, [BC] 95\% CI [-0.36, -0.13], g = -0.59$, based on college-going status. Non-FGCS had higher levels of hope and self-reported GPA compared to FGCS.

The gender identity choices in the present study were men, women, transgender, gender non-conforming/gender fluid, and 'other'. The only main variable that was affected by gender was the ASES, where respondents who identified as male scored significantly lower compared to respondents who identified as female (-.402) ($p = 0.002$). Due to the small sample sizes for 'other' ($n = 2$), transgender ($n = 2$) and gender non-conforming/gender fluid ($n = 4$), meaningful conclusions were not determined.

Since both FGCS and male students performed significantly lower in academic self-efficacy, a Chi-square test of independence was calculated to see if there was an interaction between college-going status and gender. The results yielded a non-significant interaction between gender (men and women) and college-going status ($\chi^2(1) = .028, p = .86$), meaning that FGCS status was not related to male students to score lower compared to female students. Out of the 79 FGCS, 23 were men and 55 were women. The number of men to women participants reflects the larger population of the university from where the sample was obtained.

The findings were congruent with past literature that FGCS perform lower academically and have fewer resources to effectively navigate the post-secondary setting (Ishitani, 2006; McDonough, 1997; Padgett et al., 2012). When relating this finding in previous literature, FGCS background, and college factors such as non-white ethnicity membership and low socioeconomic status have shown to increase difficulties in academic success in college (Ishitani, 2006).

Although socioeconomic status data was not gathered in the present study, it is expected that FGCS from the present sample reflect similar trends from larger FGCS research (Ishitani, 2006; McDonough, 2004). Ethnicity data was obtained in the present

study, and when FGCS ethnicity was further analyzed, out of the 79 FGCS, 58 were non-white, and 21 were white/Caucasian. This means that in the current sample of FGCS, the majority (73%) were non-white. Conversely, in the current sample of non-FGCS, the majority (60%) were white/Caucasian.

This finding agrees with research from Ishitani (2006) and Chen and Carroll (2005) that FGCS are more likely to be non-white. This result is especially significant because the study took place at a small faith-based university which is majority white/Caucasian students. Even in a small private university that is predominately white, the FGCS are made up of mostly non-white participants. Even without accounting for ethnicity, FGCS have barriers to succeed in college, but the added disadvantage from a minority background with possible low socioeconomic status for most FGCS exacerbates the challenges.

The implication of these results indicates that non-white students and FGCS are more vulnerable to failure in the post-secondary setting based on the lower levels of hope, academic self-efficacy and GPA. Non-white participants had significantly lower GPA compared to white/Caucasian participants who had the largest effect size among the preliminary analysis ($g = .77$). The implications suggest that non-white students may require additional support and resources to achieve academic success in college.

Finally, the preliminary analysis revealed gender to be a non-significant variable for academic achievement within hope. This result is congruent with previous research by Snyder et al. (2002b) who found no significant gender differences in hope scores and academic achievement. In the ANOVA analysis that examined gender differences between hope, academic self-efficacy and GPA, the only significant variable was

academic self-efficacy between men and women (-.40) ($p = 0.002$). Past research by Morales (2009) explored the effects of mentoring with an at-risk group identified as first-generation Hispanic, male students from low socioeconomic backgrounds. This identified at-risk group echoes the findings from the present study that male, FGCS of color are the group most at-risk of failure in post-secondary setting based on the independent samples t-tests and one-way ANOVA results.

Research question one. Research question one sought to understand the correlations between trait hope, academic self-efficacy, and self-reported GPA among undergraduate students. A Pearson correlation analysis revealed positive, significant relationships between all three variables. Academic self-efficacy had a moderate correlation with self-reported GPA ($r = .45, p < .001$) and hope had a small correlation to self-reported GPA ($r = .17, p = .001$). Based on previous research, hope was predicted to be more highly correlated with academic achievement (Feldman & Kubota, 2015; Gallagher et al., 2017), however was congruent with the meta-analysis conducted by Marques et al. (2017).

The stronger correlation between ASES with academic achievement (self-reported GPA) is hypothesized based on the scope and purpose of the separate scales. The ASES measures specific beliefs around academic abilities and skills, such as knowing how to study to perform well on tests and believing in one's capacity to conduct academic tasks like research and writing papers (Chemers et al., 2001). THS, on the other hand, captures generalized beliefs around the ability to achieve goals (agency) and navigate multiple ways to reach them (pathways). It is not surprising that academic specific skills correlate

more strongly with academic achievement when compared to a general sense of goal achievement and pathways to get there.

Finally, hope and academic self-efficacy are moderately correlated ($r = .47, p < .001$), meaning that they have overlapping aspects, yet are separate variables. This finding supports the theoretical grounding that both hope and self-efficacy are rooted in positive, cognitive focused approaches in positive psychology and sociology (Bandura, 1977; Snyder & Lopez, 2005). The premise of goal-related outcomes in both hope theory and self-efficacy share similar constructs and are expected to be related (Snyder & Lopez, 2005).

Furthermore, the correlation between hope and academic self-efficacy from the present study agrees with past research by Feldman and Kubota (2015) and Gallagher et al. (2017). However, the results differ from findings by Gallagher et al. (2017) who observed that hope and academic self-efficacy were all correlated to achievement, and that hope uniquely predicted academic achievement. In the present study, the converse was found to be true, academic self-efficacy more strongly predicted academic achievement compared to hope.

This result may be explained by possible discrepancies between the use of actual cumulative GPAs, as was the case in Gallagher et al. (2017) study, compared to the use of self-reported GPA as an indicator of achievement in the present study. The study by Feldman and Kubota (2015) was similar to the present study in that self-reported GPA was used, however the study had a small sample size ($N = 89$), therefore the power of the study and implications are lowered. A meta-analysis research on hope and academic achievement by Marques et al. (2017) found hope had a small to moderate positive

relationship, which reflects the findings from the present study. Based on the results of Pearson's correlation analysis, the null hypothesis that there are no statistically significant correlations between trait hope, academic achievement, and academic self-efficacy among college students was rejected. Therefore, the alternative hypothesis that there are significant correlations between the three variables was supported.

Research question two. In research question number two, a hierarchical regression analysis was conducted for both the THS subscales, agency and pathways, as predictors to determine if one subscale more strongly predicted academic achievement (self-reported GPA). A hierarchical regression was used to compare the standardized beta coefficient (slopes) between predictors to determine which subscale was a stronger predictor of the self-reported GPA.

The pathways subscale was the only predictor in model 1, and both the pathways and agency subscales were predictors in model 2. The results from the hierarchical regression analysis had similar results compared to a related study by Feldman et al. (2009), that reported agency was a stronger predictor of goal attainment. However, the results from the present study contradict the findings from Day et al. (2010), who examined the THS subscales, academic self-efficacy, and other internal variables through a hierarchical regression analysis.

The first discrepancy between the studies include the different strengths of the THS subscales. In the present study, the agency subscale shared a small, yet significant correlation with self-reported GPA ($r = .27, p < .01$), while pathways was not significantly correlated with GPA ($r = .03, p = .25$). This finding diverges from previous

studies by Day et al. (2010), where pathways was a distinct predictor of achievement compared to agency.

Second, both subscales were correlated with one another, however, the strength of the correlation differed in the present study ($r = .63$), whereas Day et al. (2010) found an even stronger correlations ($r = .80$), which is at risk of possible multicollinearity (Field, 2013). In the present study, the correlation between the subscales were at an acceptable level ($r < .80$). In addition, the VIF (1.60) and tolerance levels (.62) were reviewed and did not indicate a serious issue with multicollinearity (Field, 2013). The largest VIF, however, is greater than 1 (1.60), which may indicate over correlations (Field, 2013). The concern whether the THS subscale constructs are truly separate was not founded based on the acceptable level of correlations between the subscales in the present study ($r < .80$). Agency and pathways share similar properties in measuring trait hope, so some overlap is expected, but they appear to measure distinct aspects of hope based on the diverging correlations and regression analysis results (Snyder et al., 1991; Snyder & Lopez, 2005).

This hypothesis is further supported in the results from the hierarchical regression that indicate pathways does not significantly predict academic achievement (self-reported GPA), $F(1, 314) = .44, p = .50, R^2 = .001, R^2_{Adjusted} = -.002$. Agency however, is a significant predictor of academic achievement, $F(2, 313) = 19.20, p < .001, R = .331, R^2 = .10, R^2_{Adjusted} = .10$.

The agency subscale yielded a larger beta value (*standardized* $\beta = .42$), compared to the pathways subscale (*standardized* $\beta = -.23$). Based on the larger absolute standardized beta values, agency is the stronger predictor. Interestingly, the pathways beta value is negative, which would be the opposite of the expected effect; as an individual's pathways increase, academic achievement is also expected to increase, not decrease. This finding is also incongruent with previous research which demonstrates an individual's sense of being able to generate successful plans to achieve the set goals (pathways), is linked with academic achievement (Day et al., 2010; Snyder, et al., 1991).

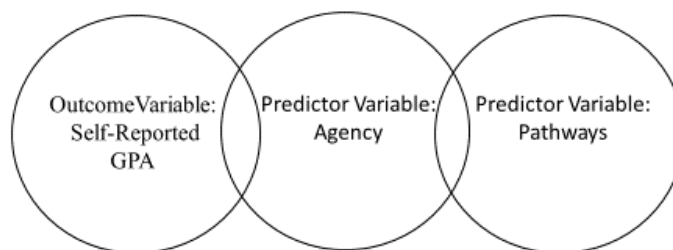


Figure 5. Visual model of a classic suppression effect with agency as the suppression variable.

When the phenomenon was further examined, the pathways subscale changed from $b = .015$ to $b = -.09$ when agency was included in the model. The pathways subscale displayed a suppression effect in the negative b value which indicated that as pathways decreases, academic achievement increases by .09 units. The weak, yet positive correlation between pathways and academic achievement along with the combination of the strong, positive correlation between the predictors, and a negative beta value, pointed to a suppression effect. The implications of pathways as a suppressor variable would mean that it artificially improved academic achievement when included in the model because pathways was accounting for the variability of agency, but not academic

achievement since it has very slight, non-significant correlation ($r = .03, p = .25$). In other words, although the pathways subscale does not predict academic achievement, when included in the regression model, it impacts overall achievement scores because it is strongly related to agency.

Finally, the present study further supports separate analysis of the hope subscales as distinct measures to determine the effective use of both subscales in predicting academic achievement. The results from the regression analysis indicate a lack of relationship between the pathways subscale and GPA, but a stronger relationship between agency and GPA. The use of the THS in research related to academic achievement may yield conflicting subscale results (high agency and low pathways or vice versa), and separate subscale analysis can shed light on those issues.

The usefulness of the pathways subscale was raised when conducting academic achievement research based on the non-significant role of pathways in academic achievement as demonstrated in the present study. The present study finds agency to be a stronger subscale in predicting achievement, and pathways to be a non-significant and weakly correlated subscale, which contradicts previous research (Day et al., 2010; Gilman et al., 2006) and concurs with others (Feldman et al., 2009).

Overall, the null hypothesis in research question two, that there is no difference between the strength of agency and pathways in predicting academic achievement among college students was rejected based on findings from the hierarchical regression analysis. The agency subscale was a stronger predictor of academic achievement among college students as measured by their self-reported GPA, and the pathways subscale was a suppressor variable.

Research question three. Research question three examined academic self-efficacy as a mediating variable in the relationship between the agency subscale within the THS, and academic achievement (self-reported GPA). Hayes (2004) PROCESS v3.3 tool was utilized for the mediation analysis, which revealed a significant indirect effect of agency on academic achievement through academic self-efficacy, $b = 0.09$; [BC] 95% CI [.05, .12]. A full mediation was found through the analysis, which indicates that academic self-efficacy fully accounts for the relationship between agency and achievement.

Academic self-efficacy as a mediator accounts for approximately 13% ($R^2 = .13$) of the variance in academic achievement, which is nearly double that of agency (7.7%; $R^2 = .07$) in the variance in the outcome variable. This result is contrary to what was expected based on previous literature that distinguishes the unique predictive power of hope above other related internal factors like academic self-efficacy (Feldman & Kubota, 2015; Gallagher et al., 2017 Snyder et al., 2002b).

The reason for this discrepancy could be again, due to the use of actual cumulative GPA that in previous studies that examined academic self-efficacy, hope, and academic achievement, versus the self-reported GPA used in the present study. The results in the present study are impacted by potential bias in a self-reported measure compared to retrieving participants' actual cumulative GPAs.

Another explanation for the complete mediation could be the general sense of goal achievement (agency) may be too broad when contrasted against academic specific skills and beliefs around achievement in a post-secondary setting, with academic achievement as the outcome variable. If academic domain-specific hope was included in the analysis alongside academic self-efficacy, that may have yielded different results.

The implications from the findings of research question three suggest that although participants' hope impacts overall achievement, academic self-efficacy explains the relationship between hope and academic achievement. For example, a student with low general hope is explained by low academic self-efficacy based on the results of the mediation analysis. This application is especially pertinent for FGCS who are less academically prepared and perform lower than non-FGCS. FGCS can benefit from specific scholastic instruction/skill building and supports to enhance individual capacity as a learner to achieve academically.

Instilling confidence and encouragement in FGCS is important, but without the specific academic support and guidance in the post-secondary setting, students may not know how to achieve their academic aspirations. Teaching students how to excel in college and affirming students' positive academic specific self-perceptions may be more effective in bolstering achievement, rather than instilling general beliefs of hopefulness in students.

Although agency is less closely associated with academic achievement than academic self-efficacy, it should not be overlooked. Agency significantly predicts higher self-reported GPA, $b = .11$, $t(314) = 5.12$, $p < .001$, [BC] 95% CI [.06, .14], meaning that students' beliefs about their ability to pursue goals is an important factor in achievement in the post-secondary setting. Based on the results of the mediation analysis, the null hypothesis that academic self-efficacy does not mediate the relationship between agency and academic achievement was rejected. Rather, the alternative hypothesis that agency significantly and positively predicts academic self-efficacy, which in turn would

significantly and positively predict academic achievement as reflected in self-reported GPA was found.

Limitations

Limitations in research are unavoidable, however, introduce threats to the internal and/or external validity of the results. Most limitations in the present study were considered in the conceptualization phase of the research, however some limitations were not revealed until after the analysis phase. The limitations from the present research are organized in the sections below under the subheading of parametric assumptions, analysis, methodology and measurement, and procedures.

Parametric assumptions limitations. The assumptions of parametric methods were not fully met in the present study, which limits the interpretation of the results. The Shapiro-Wilk test reported non-normally distributed data for the variables hope, academic self-efficacy, and self-reported GPA. When the data was further analyzed through the split file function between the separate grouping variables in the preliminary analysis (ethnicity, college-going status, and gender), the skewness and kurtosis values were within the plus two and minus two range for all three variables. The largest skewness and kurtosis values were found between non-white and white/Caucasian group with non-white participants having a skewness of -1.00 and kurtosis of 1.49. More importantly, the main analysis in the college-going status grouping reported a skewness and kurtosis values within the conservative plus one and minus one range (Field, 2013).

The assumption of normality is less stringent in studies with larger sample sizes because of the central limit theorem, which theorizes as the sample size grows, the estimate will have come from a normal distribution (Field, 2013). In addition, Field

(2013) argues the Shapiro-Wilk and other formal tests of normality test may not be appropriate for large samples because of a likelihood of significance, even when the skewness and kurtosis are not overly diverging from the normal distribution.

Based on the relatively large sample size in the present study, formal normality tests were reviewed, but other indicators of normality including the histogram, p-p plots, q-q plots, skewness, and kurtosis estimates were also checked to display normal distributions. In addition, the bootstrapped confidence intervals were computed in the present study to account for the non-normally distributed data because they do not rely on parametric assumptions.

The homogeneity between groups and variables were assessed through the Levene's test to indicate the level of variance. Similar to the normality assumptions, Field (2013) advises against the use of tests of homogeneity of variances (Levene's test) to determine the equal variance between groups in large samples because it accounts for even small and unimportant effects. Nevertheless, the homogeneity of variance tests analyzed and reported in chapter four for each group (ethnicity, college-going status, and gender).

The Levene's test reported unequal variance between non-white and white/Caucasian groups among two of the three variables, self-reported GPA, $F(1, 314) = 22.01, p < .001$, and trait hope, $F(1, 314) = 3.96, p = .04$. Similarly, the Levene's test reported unequal variance between FGCS and non-FGCS groups among two of the three variables, self-reported GPA, $F(1, 312) = 4.89, p = .02$ and hope, $F(1, 312) = 23.89, p < .001$. The Welch's tests of equality of means were observed through the "equal variances

not assumed” section used to interpret the t-test results for the two variables that did not show homogeneity of variance.

Although parametric assumptions were not fully satisfied in the present study through the formal significance tests and assumptions, other checks for normality and homogeneity of variance were reviewed and satisfied. The results are interpreted with caution due to the violation of formal normality and homogeneity assumptions for some of the variables and hinder definite conclusions.

Analysis limitations. Other limitations in the data analysis include the lack of causal conclusions based on the type of analysis used, low sample sizes in gender subgroups, and additional potential mediating variables which were unexplored in the present study. The present research utilized a convenience sampling procedure for the quantitative research therefore conclusive generalization to the larger population cannot be made (Gall, Gall, & Borg, 2007). The nature of correlation testing is limited to the observed relationships between variables, but not causal statements. For example, although in research question one all three variables, hope, academic self-efficacy and self-reported GPA were significantly correlated, one cannot determine hope causes higher self-reported GPA, but only that hope, and academic achievement are positively related.

Next, the ANOVA results between possible gender differences in hope, academic self-efficacy, and academic achievement in the preliminary analysis were difficult to confidently assess due to the small sample size for participants identifying as transgender ($n = 2$) gender fluid/non-conforming ($n = 4$) and ‘other’ ($n = 2$). Future research can focus on gathering a large enough sample size of participants who identify as transgender,

gender non-conforming or gender fluid, to see how hope, academic self-efficacy, achievement or college going-status impacts this population. On a related note, a limitation is the uneven distribution of demographic groups which does not evenly represent the span of students in the sample population. The largest group of the participants in the present study were women ($n = 224$; 70.9%) and freshmen in college ($n = 137$; 43.39%). The analysis of this study disproportionately captured women and freshmen at this small faith-based university, which may have skewed the results to reflect those populations' experiences. Lastly, although academic self-efficacy was controlled for within the mediation analysis of the study when measuring agency in relation to academic achievement, other unknown variables were not accounted for within the limited scope of this study. Other predictors were not included in the mediation model which could have also been mediating variables.

Methodology and measurement limitations. Other ideal measurement changes in the study could have provided a fuller picture of the relationships between hope, academic self-efficacy, and achievement. The addition of the academic-domain hope scale may have allowed for deeper insight into the relationships between trait hope, academic self-efficacy, and academic hope. The conclusions found between hope and academic self-efficacy could be fuller with the addition of academic hope and general self-efficacy as modeled by the study conducted by Feldman and Kubota (2015).

Other measurement changes that could have led to a more objective examination of academic achievement would be the way that academic achievement was gathered. In the present study, academic achievement was captured as a single measure through self-reported GPA. GPA is one of the indicators of academic achievement and using only a

single source to measure academic achievement limits the possible strength of the results. Additional indicators of academic achievement, such as high school GPA or standardized test scores could have strengthened the academic achievement outcomes.

Additionally, using self-reported GPA as the measure of academic achievement presents further limits to the study. Self-reported GPA is often used by researchers when the actual GPA may be unobtainable or difficult to obtain for various reasons. Self-reported GPA is often used in place of students' actual GPA obtained from the registrar. This substitution has shown to have high correlations with students' actual GPA (Cassady, 2001; Kuncel, Crede, & Thomas, 2005). However, actual GPA would be a stronger indicator of a students' academic achievement, as opposed to perceived achievement.

The use of self-reported GPA may introduce social desirability bias and increase a threat to internal validity; however, the anonymous nature of the survey was expected to mitigate the potential for this bias. In addition, self-reported measures of GPA may be measuring subjective student perception and motivation that actual GPA would correct for (Kuncel et al., 2005). Overall, the use of actual participant GPA would be the preferred method to capture student academic achievement to eliminate the possibility of social desirability bias and reduce the risk of internal validity.

Similarly, participants were also informed the research study was investigating hope and how it relates to academic achievement. This knowledge may have skewed the participants to answer in a more positive light and is a risk of social desirability bias. However, since the online survey was anonymous, the risk of social desirability bias may have been reduced.

The THS lacks consensus on how to conceptualize and utilize the THS among hope researchers. The subscales were examined separately within the present research, and the agency subscale was a stronger predictor of academic achievement, which further points to the separate functions of the subscales as stated by Day et al. (2010). Furthermore, agency was analyzed with academic achievement in a mediation analysis with academic self-efficacy based on the finding that pathways does not significantly predict achievement.

There are inconclusive ways that the THS is utilized; some researchers use and report it as a single measure (Snyder et al., 1991; Snyder et al., 1996; Sympson & Snyder, 1997), and others use only part of the scale for analysis and reporting (Cheavens et al., 2006; Day et al., 2010; Feldman et al., 2009; Gilman et al., 2006). The THS lacks consensus in how to utilize and report the THS; Snyder et al. (1991), the creator of the THS, does not give guidance on how to report the separate subscales, only how to score the subscales. For researchers and consumers of research, it would be beneficial to have consensus between researchers with the use and reporting of the THS.

Procedural limitations. Finally, different recruitment methods could have introduced external validity threats. Participants were recruited from the psychology and writing departments, the International Studies Department, Multi-Ethnic Programs, and through tabling on campus. Some of the participants were recruited in the classroom setting, while other participants were recruited in a less formal setting (tabling). The participants varied use of devices (laptop, cellphone, iPad) to take the online survey may have also created variability in the results.

The participants who completed the online research survey in person during tabling may have answered questions less thoroughly because of time constraints in between classes. More than half of the results were gathered through tabling. This may have skewed the results towards participants who were available during passing period and may have unintentionally passed over students who off-campus, working or commuters, many of whom may be FGCS.

Recommendations for Future Research

Overall, the present study confirmed statistically significant group differences between FGCS and non-FGCS as well as non-white and white/Caucasian participants among the three main variables: hope, academic self-efficacy, and self-reported GPA. FGCS scored lower in all three variables compared to non-FGCS. The THS subscale, agency was a small, yet significant factor in college students' academic achievement, however academic self-efficacy fully mediated the relationship. Based on the interpretation and discussions from the present study, practical implication for educators, community leaders, government agencies and other stakeholders, as well as future research recommendations are described below.

Practical implications. Students in all levels in the education setting can benefit from instruction and care in areas of social-emotional needs in school and community settings. Research highlights the role of psychological factors that impact not only students' academic performance, but also their overall wellbeing (Snyder et al., 2003; Gilman et al., 2006). School counselors, teachers, social workers, therapists, parents, community members, school administrators, and district leaders can advocate at the

national and local level to prioritize student social-emotional learning and wellbeing in the school setting starting in early education.

Specifically, students hope can be nurtured through modeling and encouraging positive self-perception as agents capable of initiating goals and successfully achieving them (Bashant, 2016). Students pathways can also be enhanced through teaching goal-setting skills and problem-solving potential barriers and alternative routes to reach the desired goal. Students' belief in their ability to effectively achieve goals (agency) was shown to be a stronger predictor of academic achievement compared to their belief that there is a way to achieve their goals (pathways) in the present research and in findings by Feldman et al. (2009).

However, this finding should be interpreted cautiously since previous research is inconclusive based on mixed findings which postulate that pathways is more strongly associated with achievement, while others find pathways as a stronger predictor. Therefore, additional research is needed to clarify if one subscale is a more important factor in relation to academic outcomes. Educators and stakeholders can work to grow hope in students because past research has demonstrated the positive link hope shares with academic achievement (Day et al., 2010; Feldman & Kubota, 2015; Gilman et al., 2006; Snyder et al., 2003).

Practical tools and strategies can be implemented to enhance agency in the school setting. First, a foundation of a positive relationship with students allows trust to be established (Marquez et al., 2017). Educators can also create a safe and caring learning environment where students grow in hope through the vicarious experience of others and through individuals that believe in them (Sheehan & Rall, 2011). Hope can also be

fostered through creating opportunities for students to experience mastery of goals (even small steps towards achievement) to increase their experiences with successful goal pursuits. A compilation of positive goal outcomes is believed to strengthen agency for future goal initiation and pursuits (Snyder et al., 2002b).

Based on the finding that academic self-efficacy mediates the relationship between agency and academic achievement, hope interventions and instruction should be coupled with academic self-efficacy efforts. Hope interventions, psychoeducational learning, resources and guidance in school settings should address academic specific self-perceptions about ability and problem-solving barriers related to specific academic goal pursuits. General pathways, of finding a way to overcome barriers does not translate clearly into the education setting where practical help in an academic subject or study skills is needed. The results from the present study suggest that academic specific self-efficacy and supports are especially important to overall achievement. Without a student knowing *how* they can succeed academically, believing that they can succeed is limited in its effect.

The implications from the findings of research question three suggest that although participants' hope impacts overall achievement, academic self-efficacy explains the relationship between hope and academic achievement. For example, a student with low general hope is explained by low academic self-efficacy based on the results of the mediation analysis. This application is especially pertinent for FGCS who are less academically prepared and perform lower than non-FGCS. FGCS can benefit from specific scholastic instruction/ skill building and supports to enhance individual capacity as a learner to achieve academically.

Instilling confidence and encouragement in FGCS are important, but without the specific academic support and guidance in the post-secondary setting, students may not know how to achieve academically in college. The findings from the present research suggest teaching students how to excel in college and affirming students' positive academic specific self-perceptions may be more effective in bolstering achievement, rather than instilling general beliefs of hopefulness in students.

Although agency is less closely associated with academic achievement than academic self-efficacy, it should not be overlooked. Agency significantly predicts higher self-reported GPA, $b = .11$, $t(314) = 5.12$, $p < .001$, [BC] 95% CI [.06, .14], meaning students' beliefs about their ability to pursue goals is an important factor in achievement in the post-secondary setting. Based on the results of the mediation analysis, FGCS can benefit from encouragement around academic capabilities and aspirations rather than instilling a general sense of agency to impact academic achievement.

Individuals' cultural views (individualistic or collectivist) can be better aligned with their locus of hope, and in turn the intervention plans. FGCS are often non-white and hold collectivist views therefore rely on external sources of hope such as family, friends, and spirituality (Chen & Carroll, 2005; Ishitani, 2006). Therefore, external sources of hope should be recognized and included in hope interventions in addition to the internal sources of hope in individuals within the THS both in the K-12 and college settings (Bernardo, 2010; Du & King, 2013; Snyder et al., 1991).

High school counselors, graduation coaches, and others in the K-12 setting can reach out to partner with the family of students who would be the first in their family to go to college early in the college and career planning process. Utilizing and recognizing

external sources of hope in the school setting may be more effective in bolstering hope and academic achievement since external sources of hope like family and significant relationships may be a more effective way to nurture hope in students from collectivist cultures.

In addition, students who would be the first in their family to go to college could be identified by school counselors and provided additional supports and resources through programs like AVID prior to entering college. School counselors can also be the one to initiate a meeting with at-risk students to help ensure students are on track to graduate and be a liaison to community and school resources to support academic achievement.

In the college setting, FGCS can be connected to student support services early in their college and high school years to explicitly orient students to resources that are available, and instruction on how to access those resources throughout their college education (Martinez, 2003). These services could include providing study skills, time management skill, writing support and more that are necessary to be successful in the college setting. FGCS can also be acquainted with other FGCS to grow a support network among themselves throughout their college career.

Research also suggests FGCS lack cultural capital to effectively navigate the education setting and need professional and academic information that can help access opportunities. Mentors and role models can be an avenue to not only increase FGCS cultural capital, but also build positive connections that could last a lifetime (McDonough, 1997; Morales, 2009; Padgett et al., 2012). Mentors could inspire FGCS to pursue their dreams by being an example of success. Mentors can also supply valuable

insider information to FGCS and provide professional and academic knowledge and opportunities they often lack (Morales, 2009).

Specifically, male, Hispanic and African American FGCS are less likely to persist in college than female, white FGCS (Chen & Carroll, 2005; Ishitani, 2006). These groups within at-risk groups can be have additional targeted support services that can range from academic help to career counseling. Overall, FGCS are an at-risk group, and particularly, non-white, male students from low socioeconomic backgrounds are more vulnerable to failure in college and where intervention efforts and research should be invested.

Although hope has been widely recognized to improve students' academic achievement, interventions in the school setting and measures of effectiveness are limited. Most of the hope research has been conducted with clinical populations through extensive interventions (Cheavens et al., 2006; Feldman & Dreher; 2012). More academic specific hope intervention in the school setting is recommended and along with measures of growth in hope to help develop confident and equipped learners.

In summary, the results from the present study suggest that student academic specific self-efficacy and hope supports are especially important to overall achievement. Students need to believe they can succeed academically and need the tools to know how to get there. Hope interventions should be focused on academic specific beliefs and skills in relation to overall achievement. Students need practical tools and strategies to enhance agency and academic skills in the school setting. Family partnerships in precollege and college interventions especially among FGCS and other at-risk groups are expected to yield more hopeful academic outcomes.

Recommendation for future research. The THS is a highly recognized scale within the psychology field, however, ongoing refinement and further examination are required to help strengthen the overall scale as well as unify the subscales (Scioli et al., 2011; Snyder & Lopez, 2005). Continued refinement and further examination of the THS and subscales are recommended for future research. The use and measure of the THS is debated among the research community; issues of collinearity have been raised, and whether the THS subscales are genuinely distinct (Day et al., 2010). The findings from the present study show the subscales measure hope in separate capacities and the agency subscale is a substantially stronger predictor of academic achievement than pathways.

Furthermore, additional research is needed to determine the nuances of the subscales when conducting research around academic achievement since the subscales can yield opposite scores. Although the THS was designed to be analyzed as a single measure, there is a lack of guidance on if, and how to report conflicting subscales (Snyder et al., 1991; Snyder et al., 1997). Based on the findings of the present study, a closer study on both subscales and consensus on the use and reporting of the THS is a recommended next step in hope research.

Snyder's (1991) THS has been criticized for the lack of multicultural usability because the measure was based on a western conceptualization of hope (Marquez et al., 2017). Future research on existing extensions of the THS and research on updated and refined multicultural hope measure is recommended. Multiple researchers have revamped the THS to create a more culturally inclusive measure of hope that recognizes external contributors to individual's hopefulness (Bernardo, 2010; Du & King, 2013; Scioli et al., 2011).

For example, Bernardo (2010) created an extended version of Snyder's (1991) THS, called the Locus of Hope Scale, however, the studies that took place to test the scale were with Filipino students in their home country, and local university students in China (Du & King, 2013). The Locus of Hope Scale should be administered in individualistic cultures to assess the validity and reliability of the study cross-culturally. Future research can further examine the THS, subscales to develop a more culturally inclusive hope scale.

Another recommendation is to conduct academically focused hope research in school-aged children in the education setting because most research is among college-aged students. Individuals who attend a post-secondary institution are a successful population comparatively in many regards. To learn more about the trajectory of hope, research should be conducted among students in the K-12 school system to determine the long-term effects of hope.

A meta-analysis by Marquez et al. (2007) found most research involving hope and academic achievement were conducted in the college or university level (61%). In comparison, 30.5% of hope and academic achievement studies were conducted in the elementary, middle, and high school levels. There is evidence that students are more connected with hope and academic outcomes in elementary school and wanes as students' progress through the school system. From a research perspective, hope should be examined, understood, and interventions tried at an earlier age to increase the chances of positive outcomes (Marquez et al., 2017).

The final research recommendation is to further investigate FGCS and other expounding factors that put this population even more at-risk. Past research suggests that

female FGCS are 56% more likely to graduate on time than male FGCS (Ishitani, 2006). The present research did not find gender differences in hope or academic achievement but found men to have significantly less academic self-efficacy compared to women. The findings did confirm FGCS are more likely to be non-white, who experience added difficulties to achieve academically apart from their FGCS status. FGCS overall reported significantly lower levels of hope, academic achievement, and academic self-efficacy compared to non-FGCS and future research can investigate effective academic specific hope interventions for this population to bolster achievement in the post-secondary setting.

Conclusion

Past research shows that hope is positively associated with higher cumulative GPAs, higher graduation rates, and reduced risk of dropping out, when compared with related factors, however, hope was not found to add a unique contribution in academic achievement when controlling for academic self-efficacy in the present study (Gallagher et al., 2017; Snyder et al., 2002b). Specifically, academic self-efficacy had a stronger correlation to academic achievement compared to hope. The findings suggest general hope is less related to college student's GPA than previous research has demonstrated.

The present study revealed that FGCS had significantly lower hope, academic self-efficacy, and self-reported GPA compared to non-FGCS. Within the THS, the pathways subscale was minimally related academic achievement, but the agency subscale was found to significantly predict academic achievement. Implications based on the results of the study provide evidence for academic specific support and agency related interventions to increase academic achievement. Future research may further delve into

the role of hope and academic self-efficacy among at-risk groups, specifically FGCS, male, non-white students in the post-secondary setting.

References

- Affleck, G., & Tennen, H. (1996). Construing Benefits from Adversity: Adaptational Significance and Dispositional Underpinnings. *Journal of Personality*, 64, 899-922. <http://dx.doi.org/10.1111/j.1467-6494.1996.tb00948.x>
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191-215. doi:10.1037/0033-295X.84.2.191
- Bashant, J. L. (2016). Instilling hope in students. *Journal for Leadership and Instruction*, 15(1), 17-20.
- Bernardo, A. B. I. (2010). Extending hope theory: Internal and external locus of trait hope. *Personality and Individual Differences*, 49(8), 944-949.
- Blackwell, E., & Pinder, P. J. (2014). What are the motivational factors of first generation minority college students who overcome their family histories to pursue higher education? *College Student Journal*, 48(1), 45-56.
- Cataldi, E. F., Bennett, C. T., & Chen, X. (2018). First-generation students: College access, persistence, and postbachelor's outcomes. Stats in Brief. NCES 2018-421. *National Center for Education Statistics*. Retrieved from <https://nces.ed.gov/pubs2018/2018421.pdf>
- Cassady, J. C. (2001). *Self-Reported GPA and SAT Scores*. *ERIC Digest*. Retrieved from ERIC Database. ED458216.
- Cheavens, J. S., Feldman, D. B., Gum, A., Michael, S. T., & Snyder, C. (2006). Hope therapy in a community sample: A pilot investigation. *Social Indicators Research*, 77(1), 61-78. doi:10.1007/s11205-005-5553-0

- Chemers, M. M., Hu, L., & Garcia, B. F. (2001). Academic self-efficacy and first-year college student performance and adjustment. *Journal of Educational Psychology*, 93(1), 55.
- Chen, X., & Carroll, C. D. (2005). First-generation students in postsecondary education: A look at their college transcripts. Postsecondary Education Descriptive Analysis Report. NCES 2005-171. *National Center for Education Statistics*. Retrieved from <https://files.eric.ed.gov/fulltext/ED485756.pdf>
- Day, L., Hanson, K., Maltby, J., Proctor, C., & Wood, A. (2010). Hope uniquely predicts objective academic achievement above intelligence, personality, and previous academic achievement. *Journal of Research in Personality*, 44(4), 550-553.
doi:10.1016/j.jrp.2010.05.009
- DeFreitas, S., & Rinn, A. (2013). Academic achievement in first generation college students: The role of academic self-concept. *Journal of the Scholarship of Teaching & Learning*, 13(1), 57–67.
- Du, H., & King, R. B. (2013). Placing hope in self and others: Exploring the relationships among self-construals, locus of hope, and adjustment. *Personality and Individual Differences*, 54(3), 332–337.
- Duckworth, A. L., & Seligman, M. P. (2005). Self-discipline outdoes IQ in predicting academic performance of adolescents. *Psychological Science*, 16(12), 939-944.
- Edwards, L., Rand, K., Lopez, S., & Snyder, C. R. (2007). Understanding hope: A review of measurement and construct validity research. *College of Education Faculty Research and Publications*, 83-93.

- Feldman, D. B., & Dreher, D. E. (2012). Can hope be changed in 90 minutes? Testing the efficacy of a single-session goal-pursuit intervention for college students. *Journal of Happiness Studies, 13*(4), 745-759. doi:10.1007/s10902-011-9292-4
- Feldman, D. B., & Kubota, M. (2015). Hope, self-efficacy, optimism, and academic achievement: Distinguishing constructs and levels of specificity in predicting college grade-point average. *Learning & Individual Differences, 37*, 210-216. doi:10.1016/j.lindif.2014.11.022
- Feldman, D. B., Rand, K. L., & Kahle-Wroblewski, K. (2009). Hope and goal attainment: Testing a basic prediction of Hope Theory. *Journal of Social and Clinical Psychology, 28*(4), 479-497.
- Feldman, D. B., Rand, K. L., Kahle, K., & Snyder, C. R. (2001). *Development and validation of the Goal Specific Hope Scale*. Unpublished manuscript, University of Kansas, Lawrence.
- Field, A. (2013). *Discovering statistics using IBM SPSS statistics: And sex and drugs and rock 'n' roll* (4th ed.). Los Angeles: Sage.
- Gall, M. D., Gall, J. P., & Borg, W. R. (2007). *Educational research: An introduction* (8th ed.). Upper Saddle River, NJ: Pearson.
- Gallagher, M. W., Marques, S. C., & Lopez, S. J. (2017). Hope and the academic trajectory of college students. *Journal of Happiness Studies, 18*(2), 341-352. doi:10.1007/s10902-016-9727-z
- Gilman, R. G., Dooley, J., & Florell, D. (2006). Relative levels of hope and their relationship with academic and psychological indicators among adolescents. *Journal of Social & Clinical Psychology, 25*(2), 166-178.

- Hayes, A. F., & Preacher, K. J. (2004). Statistical mediation analysis with a multicategorical independent variable. *British Journal of Mathematical & Statistical Psychology*, 67(3), 451–470. doi-org.ezproxy.spu.edu/10.1111/bmsp.12028
- Hayes, A. F., & Scharkow, M. (2013). The Relative trustworthiness of inferential tests of the indirect effect in statistical mediation analysis: Does method really matter? *Psychological Science* (0956-7976), 24(10), 1918–1927. doi-org.ezproxy.spu.edu/10.1177/0956797613480187
- Hoaglin, D. C., Iglewicz, B., & Tukey, J. W. (1986). Performance of some resistant rules for outlier labeling. *Journal of the American Statistical Association*, 81(396), 991.
- Ishitani, T. T. (2006). Studying attrition and degree completion behavior among first-generation college students in the United States. *Journal of Higher Education*, 77(5), 861–885.
- Kuncel, N. R., Crede, M., & Thomas, L. L. (2005). The validity of self-reported grade point averages, class ranks, and test scores: A meta-analysis and review of the literature. *Review of Educational Research*, 75(1), 63-82.
- Marques, S. C., Gallagher, M. W., & Lopez, S. J. (2017). Hope- and academic-related outcomes: A meta-analysis. *School Mental Health*, 9(3), 250-262. doi:10.1007/s12310-017-9212-9
- Martinez, M. D. (2003). Missing in action: Reconstructing hope and possibility among Latino students placed at risk. *Journal of Latinos and Education*, 2(1), 13–21.
- McDonough, P. M. (1997). *Choosing colleges. How social class and schools structure opportunity*. SUNY Press.

- McDonough, P. M. (2004). Counseling matters: Knowledge, assistance, and organizational commitment in college preparation. In W. G. Tierney, Z. B. Corwin, & J. E. Colyar (Eds.), *Preparing for college: Nine elements of effective outreach*. Albany, NY: SUNY Press.
- Morales, E. E. (2009). Legitimizing hope: An exploration of effective mentoring for Dominican American male college students. *Journal of College Student Retention: Research, Theory and Practice*, *11*(3), 385–406.
- Nunez, A. M., & Cuccaro-Alamin, S. (1998). First-generation students: Undergraduates whose parents never enrolled in postsecondary education. Statistical Analysis Report. *National Center for Education Statistics*. Retrieved from <https://nces.ed.gov/pubs98/98082.pdf>
- Padgett, R. D., Johnson, M. P., & Pascarella, E. T. (2012). First-generation undergraduate students and the impacts of the first year of college: Additional evidence. *Journal of College Student Development*, *53*(2), 243–266.
- Robinson, C., & Rose, S. (2010). Predictive, construct, and convergent validity of general and domain-specific measure of hope for college student academic achievement. *Research in the Schools*, *17*(1), 38-52.
- Scheier, M. E., & Carver, C. S. (1985). Optimism, coping, and health: Assessment and implications of generalized outcome expectancies. *Health Psychology*, *4*, 219-247.
- Scioli, A., Ricci, M., Nyugen, T., & Scioli, E. R. (2011). Hope: Its nature and measurement. *Psychology of Religion and Spirituality*, *3*(2), 78–97.

- Sheehan, K., & Rall, K. (2011). Rediscovering hope: Building school cultures of hope for children of poverty. *Phi Delta Kappan*, 11-12.
- Snyder, C., Feldman, D., Shorey, H., & Rand, K. (2002a). Hopeful choices: A school counselor's guide to Hope Theory. *Professional School Counseling*, 5(5), 298.
- Snyder, C. R., Harris, C., Anderson, J. R., Holleran, S. A., Irving, L. M., Sigmon, S., & Harney, P. (1991). The will and the ways: Development and validation of an individual-differences measure of Hope. *Journal of Personality & Social Psychology*, 60(4), 570-585.
- Snyder, C. R., Hoza, B., Pelham, W. E., Rapoff, M., Ware, L., Danovsky, M., Stahl, K. J. (1997). The development and validation of the Children's Hope Scale. *Journal of Pediatric Psychology*, 22(3), 399-421.
- Snyder, C., & Lopez, S. J. (2005). *Handbook of positive psychology*. Oxford ; New York: Oxford University Press.
- Snyder, C. R., Lopez, S., Shorey, H. S., Rand, K., & Feldman, D. (2003). Hope Theory, measurements, and applications to school psychology. *School Psychology Quarterly*, 18(2), 122-139.
- Snyder, C. R., Shorey, H. S., Cheavens, J., Pulvers, K. M., Adams, V. I., & Wiklund, C. (2002b). Hope and academic success in college. *Journal of Educational Psychology*, 94(4), 820-826. doi:10.1037/0022-0663.94.4.820
- Snyder, C. R., Sympson, S. C., Ybasco, F. C., Borders, T. F., Babyak, M. A., & Higgins, R. L. (1996). Development and validation of the State Hope Scale. *Journal of Personality and Social Psychology*, 70(2), 321-335. doi:10.1037/0022-3514.70.2.321

- Strayhorn, T. L. (2006). Factors influencing the academic achievement of first-generation college students. *Naspa Journal (Online)*, 43(4), 82–111.
- Sweet, S., & Grace-Martin, Karen. (2012). *Data analysis with SPSS : A first course in applied statistics* (4th ed.). Boston: Allyn & Bacon.
- Sympson, S. C., & Snyder, C. R. (1997). *Development and initial validation of the Domain Specific Hope Scale*. Unpublished manuscript, University of Kansas, Department of Psychology, Lawrence, KS.
- Sympson, S. (1999). *Validation of the Domain Specific Hope Scale*. Unpublished doctoral dissertation, Department of Psychology, University of Kansas, Lawrence.
- Tabachnick, B., & Fidell, L. S. (2013). *Using multivariate statistics* (6th ed.). Boston: Pearson Education.
- Vogt, W. P., & Johnson, B. (2011). *Dictionary of statistics & methodology: A nontechnical guide for the social sciences*. Thousand Oaks, Calif: SAGE.

Appendix A - Adult Trait Hope Scale

Worksheet 3.4 The Adult Trait Hope Scale (Snyder et al., 1991)

Directions: Read each item carefully. Using the scale shown below, please circle the number next to each item that best describes YOU.

1	2	3	4	5	6	7	8
Definitely False	Mostly False	Somewhat False	Slightly False	Slightly True	Somewhat True	Mostly True	Definitely True

- 1 2 3 4 5 6 7 8 1. I can think of many ways to get out of a jam
- 1 2 3 4 5 6 7 8 2. I energetically pursue my goals
- 1 2 3 4 5 6 7 8 3. I feel tired most of the time
- 1 2 3 4 5 6 7 8 4. There are lots of ways around any problem
- 1 2 3 4 5 6 7 8 5. I am easily downed in an argument
- 1 2 3 4 5 6 7 8 6. I can think of many ways to get the things in life that
are most important to me
- 1 2 3 4 5 6 7 8 7. I worry about my health
- 1 2 3 4 5 6 7 8 8. Even when others get discouraged, I know I can
find a way to solve the problem
- 1 2 3 4 5 6 7 8 9. My past experiences have prepared me for my future
- 1 2 3 4 5 6 7 8 10. I've been pretty successful in life
- 1 2 3 4 5 6 7 8 11. I usually find myself worrying about something
- 1 2 3 4 5 6 7 8 12. I meet the goals that I set for myself

Scoring information

Pathways subscale score: Add items 1, 4, 6, and 8. Scores on this subscale can range from 4 to 32, with higher scores indicating higher levels of pathways thinking.

Agency subscale score: Add items 2, 9, 10, and 12. Scores on this subscale can range from 4 to 32, with higher scores indicating higher levels of agency thinking.

Total hope score: Add the pathways and Agency subscales together. Scores can range from 8 to 64, with higher scores representing higher hope levels.

Copyright © 1991 by the American Psychological Association. Adapted with permission. The official citation that should be used in referencing this material is Snyder, C. R., Harris, C., Anderson, J. R., Holleran, S. A., Irving, L. M., Stigmon, S. T., Yoshinobu, L. R., Gibb, J., Langelle, C., & Harney, P. (1991). The will and the ways: Development of an individual-differences measure of hope. *Journal of Personality and Social Psychology*, 60, 570-585.

Appendix B - Participant Demographic Data Questions

Age: _____

What year are you at Seattle Pacific University?:

- Freshman
- Sophomore
- Junior
- Senior
- 5th year senior

Gender:

- Man
- Woman
- Transgender
- Gender non-conforming/gender fluid
- Other

What is your estimated cumulative grade point average (GPA)?: _____

Which race/ethnicity best describes you?

- American Indian or Alaskan Native
- Asian / Pacific Islander

- Black or African American
- Hispanic
- White / Caucasian
- Other/ Mixed

Which religious/faith background do you identify with most?:

- Christian (including Catholic, Protestant and all Christian denominations)
- Hindu
- Muslim
- Buddhist
- Jewish
- Sikh
- Unsure
- No religion

How prepared were you when you entered college based on (rigorous high school coursework [Advance Placement, International Baccalaureate, advanced math classes], college planning and preparation with a school counselor and/or family members).:

- Under prepared
- Somewhat prepared
- Very prepared

If your family immigrate to the United States within the last 3 generations, which generation do you consider yourself a part of?:

- 1st generation (born outside of the United States)
- 1.5 generation (born outside of the United States, but immigrated at an early age to the United States)
- 2nd generation (parents immigrated to the United States)
- 3rd generation (grandparents immigrated to the United States)

If your family immigrated to the United States within the last 3 generation, which country did your family immigrate from? : _____

What is your mother's highest level of formal education?:

- No degree
- High school diploma or GED
- Some college
- College degree
- College degree and above (Masters, Doctorate, other professional degree)

What is your father's highest level of formal education?:

- No degree
- High school diploma or GED
- Some college

- College degree
- College degree and above (Masters, Doctorate, other professional degree)

What is your highest education aspiration?:

- Up to bachelor's
- Master's degree
- Doctorate/ Professional degree

Appendix C - Academic Self-Efficacy Scale

CODE BOOK OF SCALES USED: CHEMERS, HU, GARCIA, 2001

Chemers, M. M., Li-tze Hu, & Garcia, B. F. (2001). Academic Self-Efficacy and First-Year College Student Performance and Adjustment. *Journal of Educational Psychology*, 93(1), 55. <https://doi-org.ezproxy.spu.edu/10.1037/0022-0663.93.1.55>

Please acknowledge, using proper citation.

Please answer the following questions indicating how much each statement is true for you. Using the rating scale below, write the number that best reflects your answer on the space provided before each question.

ACADEMIC SELF-EFFICACY SCALE (ASE)

:_____	:_____	:_____	:_____	:_____	:_____	:_____
1	2	3	4	5	6	7
Very Untrue						Very True

____ 1. I know how to schedule my time to accomplish my tasks.

____ 2. I know how to take notes.

____ 3. I know how to study to perform well on tests.

____ 4. I am good at research and writing papers.

____ 5. I am a very good student.

____ 6. I usually do very well in school and at academic tasks.

____ 7. I find my university academic work interesting and absorbing.

____ 8. I am very capable of succeeding at the university.

Appendix D - Research Introduction Letter

Research Introduction Letter

Esther Penzar

Doctoral Candidate Seattle Pacific University

School of Education

phone: 253-320-8177

email: choey@spu.edu

Project Title: The Role of Hope Among College Students Academic Achievement:

Validation Study #181906005

My name is Esther Penzar, and I am a doctoral student in the Seattle Pacific University Counselor Education program conducting research for my dissertation. The purpose of my study is to explore student's hopes and how that relates to academic achievement. You were selected because of your standing as an undergraduate student. You will be asked to participate in this study by completing Trait Hope Scale (12-question scaled survey) and the Academic Self-Efficacy Scale (8- question scaled survey) along with basic demographic information questions. The survey and demographic questions will take approximately 15 minutes to complete.

At the end of the you will be asked to click the circle if you agree to participate in this study, and it will be considered that you have given the researcher consent to use the data

that you have provided for research purposes. The results will be reported in the researcher's dissertation. Only the researcher will see individual results from the survey and academic measure, and the analysis of the survey will be conducted in group level findings, and individual responses and academic measures will be confidential to the extent of the law. The survey website is secure and the data you submit is password protected.

Your participation is completely voluntary. You may refrain from participating without any impact on your grade, class standing, or status in the program. If you choose not to participate, you may leave the classroom before the survey is administered. If you do not wish to participate, you may stop at any time. You may skip any questions in the survey you don't wish to answer. Responses will be confidential, and you will remain completely anonymous in the analysis and report of the research project. There are no right or wrong answers, so please answer all questions honestly. If you are unsure about how to answer a question, please choose the response that best describes you.

Participants will be eligible for a lottery drawing for an Amazon gift card including one \$50 prize and five \$20 prizes. The benefits for your participation include a heightened awareness of the future and your life. There are no known risks associated with your participation in this study. If your participation in this research project stimulates issues that require further discussion, you can seek student counseling services at The Student Counseling Center by calling (206) 281-2657.

This research study has been reviewed and approved by the SPU Institutional Review Board (IRB # 181906005). Questions or concerns about research participants' rights may be directed to the SPU IRB office. The phone number is 206-281-2201. If you have any questions about this survey, please contact me, the researcher Esther Penzar at phone 253-320-8177 or by email at choey@spu.edu. The SPU professor who is overseeing this dissertation research is Dr. Cher Edwards. She can be reached at phone number 206-281-2286 or by email at edwards@spu.edu.

Sincerely,

Esther Penzar

Doctoral Candidate Seattle Pacific University

Appendix E - IRB Approval Letter



School of Education

3307 Third Avenue West, Suite 202
Seattle, Washington 98119-1950

206 281 2214 phone
206 281 2756 fax

www.spu.edu

February 4, 2019

Subject: IRB #181906005 (Exempt Review)

To: Esther Penzar
Cc: Dr. Cher Edwards

Your research project "The Role of Hope Amongst College Students Academic Achievement" has been approved. This study was approved under exempt review as it met the following criteria:

- Research uses survey or interview procedures or observations (including observations by participants) of public behavior AND at least one of the following conditions exist:
- a. Human participants cannot be identified directly or through identifiers code or numbers
OR
 - b. The participants' responses or the observations recorded, if they became known outside research, cannot reasonably place the participant at risk of criminal or civil liability or be damaging to the participant's financial standing or employment
OR
 - c. The research does not deal with sensitive aspects of the participant's own behavior, such as illegal conduct, drug use, sexual behavior, or use of alcohol

Your approval is in effective until what time any methods of the study change substantively. When that occurs, you will need to renew your IRB application. Your study has been assigned IRB number: **IRB # 181906005**.

To complete your documents please add the IRB # to your study's written recruitment material and invitation to participate in the research project.

Use your study number in any further communication regarding this study.

Best wishes in the completion of your research

Sincerely,

John B. Bond, Ed.D.
SOE IRB Coordinator
Professor of Educational Leadership

Appendix F - Recruitment Half-Sheet

Student Hope and Academic Achievement Study

My name is Esther Penzar, I am a PhD student in SPU's Counselor Education program. I am recruiting undergraduate students at SPU to participate in my dissertation study looking at the role of 'hope' in student academic achievement.

The study consists of a 20-question anonymous survey along with basic demographic information questions.

It will take **less than 15 minutes to complete**. Participants will be eligible for a lottery drawing for **Amazon gift cards** including **one \$50 prize** and **five \$20 prizes**. Thank you!

The link to the online survey is below as well as a QR code.

I would appreciate your participation in my dissertation study. If you have any questions I can be contacted through my email choey@spu.edu IRB# 181906005

<https://tinyurl.com/spuhope>



Appendix G - Recruitment Email

Thu 1/31/2019 5:26 PM

Hello Dr. Moe,

I hope 2019 has been off to a great start! I'm reaching out to ask about the possibility of recruiting undergraduate students taking WRI 1000: academic inquiry and writing class at SPU to participate in my dissertation research study. My dissertation is looking at first-generation college students and non-first-generation college students' hopefulness and how that may impact their academic achievement. I've specifically focused on students taking WRI 1000 class since historically first-generation college students are more likely to take review/ foundational classes in college.

My study design is an anonymous online survey, which includes 20-scaled questions that will measure students hope and academic self-efficacy and gather demographic information. The survey is estimated to take no more than 20 minutes to complete. The corresponding materials in the online survey (research letter, consent form, demographic questions), and are attached to this email for you to view.

Please let me know if you would be open to helping me with recruitment by sharing the link to the online survey with your students. I could come in person to the class (pre-

arranged and with permission) to briefly introduce myself, the study and share the online link to the survey to the students.

Please let me know your thoughts and if the research participant recruitment would be a possibility. Also, if there is someone I should reach out to in the department about recruiting, I would be happy to do that too. Thank you for your time and consideration.

Esther (Choe) Penzar

Seattle Pacific University

M.Ed. School Counseling

Email: choey@spu.edu