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The Hero Within: Developing the Psychological Capital of First-Generation Students

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THE HERO WITHIN: DEVELOPING THE PSYCHOLOGICAL CAPITAL OF FIRST-GENERATION STUDENTS

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DEDICATION

I dedicate this dissertation to my loving parents and grandparents, whose unwavering love and support have been a constant source of inspiration throughout my life's journey. In particular, I would like to pay tribute to my dad, who I wish could be here to celebrate this accomplishment with me.

My parents' encouragement and insistence on the value of education have shaped the path I have taken, instilling in me the drive to achieve my academic goals. I am forever grateful for the sacrifices my parents made to provide me with every opportunity to succeed.

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ABSTRACT

Psychological capital (PsyCap) is a higher-order construct comprised of four psychological resources: hope, efficacy, resilience, and optimism (HERO), and has been linked to academic achievement and engagement (Hazan Liran & Miller, 2019; Luthans, et al., 2012). Interventions designed to build PsyCap may be particularly helpful for first-generation (FG) students who face additional challenges in higher education. This study aimed to: (1) explore differences in PsyCap among FG and continuing generation (CG) students; (2) investigate relationships between PsyCap, GPA, and persistence; and (3) examine the impact of a 2-hour PsyCap micro-intervention (PCI) on FG students' academic PsyCap, academic achievement (GPA), and persistence (enrollment intentions). Workshop fidelity, participant perceptions, and FG student needs were also explored.

Undergraduate students completed an initial survey (N = 607). A subset of FG students (n = 34) was randomly assigned to a treatment or waitlist control condition. The treatment group (n = 18) participated in the academic PsyCap intervention and both groups completed surveys at three time points (Pre-Post-Retention). Final sample for analysis included 28 participants (n = 17 treatment, n = 11 control). Comparison of FG (n = 167) and CG (n = 440) students' PsyCap revealed no statistically significant differences. Significant positive relationships were found between academic PsyCap, GPA, and persistence. Regarding the PCI, analysis revealed no statistically significant differences in academic PsyCap, GPA, or persistence between the two groups over time;

however, participant feedback indicated the intervention was engaging, useful, and positively impacted their academic experience. The findings have implications for future research and educational practice, emphasizing the need to further explore the role of PsyCap in supporting FG students and addressing academic challenges and needs.

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LIST OF ABBREVIATIONS

CG.....Continuing-Generation

FG..... First-Generation

GPA.....Grade Point Average

HERO.....Hope, Efficacy, Resilience, Optimism

PCI..... Psychological Capital Intervention

PCQ..... Psychological Capital Questionnaire

PsyCap.....Psychological Capital

SCT.....Social Cognitive Theory

SES..... Socioeconomic Status

T1..... Time 1 Pre-Intervention

T2.....Time 2 Post Intervention

T3.....Time 3 Retention

CHAPTER 1

INTRODUCTION

First-generation (FG) students typically refer to individuals whose parents/guardians either did not enroll in postsecondary education or did not earn a four-year degree (Cataldi et al., 2018; Chen, 2005; Ishitani, 2006; Pascarella et al., 2004). Despite institutions' best efforts to support first-generation college students, retention and graduation rates still remain lower than their continuing-generation peers (Cataldi et al., 2018; Redford & Hover, 2017; Toutkoushian et al., 2021). In fact, research suggests only 27% of first-generation students will earn a degree within four years compared to 42% of continuing generation students (DeAngelo et al., 2011; Whitley et al., 2018). Six-year graduation rates also remain dismal with only 56% of first-generation students earning a bachelor's degree compared to 74% of their continuing generation peers (Cataldi, 2018). Approaches to FG student persistence and graduation rate concerns often include promotion of programs designed to supplement academic deficiencies (e.g., tutoring, remediation courses; Banks & Dohy, 2019; Macias, 2013; Patton Davis & Museus, 2019). While there may be merit to these approaches, it is possible that institutions have overlooked opportunities to build on the strengths and psychological resources that FG students already possess (e.g., Hiemstra & van Yperen, 2015; Kellogg, 2021). These resources can be considered students' *Psychological Capital* (First et al., 2017; Gallagher et al., 2016; Komarraju et al., 2013; Luthans et al., 2014).

Psychological capital (PsyCap) is a higher-order construct comprised of four psychological resources: *hope, self-efficacy, resilience, and optimism,* sometimes referred to by the acronym HERO (Luthans, Avolio, et al., 2007). An individual's PsyCap largely contributes to who they are, what they believe they can do, what they do, and who they become (Luthans, Youssef, et al., 2007). Although psychological capital (PsyCap) has been widely used in organizational behavior to improve employee performance and well-being (e.g., Avey et al. 2010; Peterson et al., 2011; Sweetman et al., 2010; Youssef-Morgan & Luthans, 2015), its application to higher education is still relatively new and warrants further investigation. The application of PsyCap may be especially valuable for first-generation college students as they face additional challenges that threaten academic success (Engle, 2007; House et al., 2020; Pascarella et al., 2004; Radunzel, 2021). Given the upward mobility and opportunities a college degree affords individuals, especially underserved populations of students, it is important to continue exploring factors that contribute to students staying in and completing their college degree.

1.1 FIRST-GENERATION COLLEGE STUDENTS

Approximately 33% of college students are first-generation (NCES, 2018). First-generation (FG) students are more likely to be from low-socioeconomic backgrounds and often include historically underrepresented ethnic or racial groups (Engle, 2007; Center, 2017; Gibbons et al., 2019; House et al., 2020; Toutkoushian et al., 2021). Research suggests FG students face additional challenges in college (e.g., lack of family support, increased financial demands, less academically prepared) compared to their continuing-generation (CG) peers that can threaten their academic success, persistence, and overall

well-being (Engle, 2007; House et al., 2020; Pascarella et al., 2004; Radunzel, 2021; Stebleton & Soria, 2012; Toutkoushian et al., 2021). These difficulties can compound when students' FG status intersects with other marginalized identities (e.g., race, gender, age, socioeconomic status) leading to lower self-efficacy and increased stress (House et al., 2020; Ives & Castillo-Montoya, 2020).

In response to these challenges, many institutions provide programs and resources that target risk factors for FG students (e.g., increased financial demands of college, lower academic preparation, and feelings of social disconnectedness on campus). FG student support often includes high impact practices such as, transition programming (e.g., summer bridge programs, orientation), academic support (e.g., tutoring, supplemental instruction), financial aid, first-year seminar courses, peer mentoring, and specialized advising (Babineau, 2018; Castillo-Montoya & Ives, 2021; Conefrey, 2021; Pratt et al., 2019; Whitley et al., 2018). Several of these supports are a part of TRIO Programs (TRIO), federally funded outreach and student services programs designed to provide services for FG students and income eligible students (Dortch, 2018). Research suggests FG programming may only be reaching a small portion of the overall FG student population (Mortenson, 2011; Whitley et al., 2018). This could be due to FG students having additional responsibilities that limit their available time outside of the classroom (e.g., multiple jobs, family responsibilities), feeling disconnected from campus and their peers, or simply being unaware of or unwilling to use resources available (e.g., Atherton, 2014; RTI International, 2019; Soria & Stebleton, 2012; Stebleton & Soria, 2012; Stephens et al., 2012; Yee, 2016). While some programs and resources have shown to contribute to the success of FG students, disparities still exist between FG students and

their CG peers regarding academic success and persistence (Cataldi et al., 2018; Toutkoushian et al., 2021). As such, there is a need to consider additional approaches that build on potential assets FG students already possess and allow for a broader reach.

1.2 PSYCHOLOGICAL CAPITAL

Psychological capital (PsyCap) is a higher-order construct comprised of four psychological resources: hope, self-efficacy, resilience, and optimism (HERO, Luthans et al., 2007). These resources are considered to be state-like and relatively malleable indicating they can be measured, developed, and managed (Avey, et al., 2010; Luthans & Youssef-Morgan, 2017). PsyCap resources share a common theme of emphasizing positive appraisals of one's situation and focusing on the potential for success through effort and perseverance (Luthans, Avolio, et al., 2007).

PsyCap has been empirically tested and widely used in organizational behavior and related fields, but over the last decade, it has been applied to a variety of other settings, including higher education. In the workplace, PsyCap has been linked to individual attitudes, creativity, job performance, job satisfaction, employee retention, and psychological well-being (e.g., Alessandri et al., 2018; Avey et al. 2010; Gupta & Shaheen, 2018; Peterson et al., 2011; Youssef-Morgan & Luthans, 2015). Although research on PsyCap in academia is still relatively new, results show similar trends to workplace settings. PsyCap has been linked to favorable outcomes such as academic achievement, engagement, learning empowerment, and overall student well-being (Barratt & Duran, 2021; Hazan Liran & Miller, 2019; Luthans, et al., 2012; Luthans et al., 2019; Martinez, et al., 2019; Riolli et al., 2012; Slåtten et al., 2021; Sweet et al., 2019; You, 2016).

Examinations of the individual HERO resources have also indicated a positive impact on students' college experience. The PsyCap resources have been connected to superior academic achievement, predicted higher GPA, increased motivation, and higher persistence and graduation rates (e.g., Bartimote-Aufflick et al., 2016; Gallagher et al., 2016; Montas et al., 2020; Rand et al., 2020; Robbins et al., 2018; Wilcox & Nordstokke, 2019). Taken together, these findings provide support for the application of PsyCap in academia in order to support and promote student success.

1.3 DEVELOPING PSYCHOLOGICAL CAPITAL

Development of PsyCap is often promoted in the workplace and education using a Psychological Capital Intervention (PCI). PCIs have been used to not only increase individual PsyCap levels but also positively impact specific outcomes, such as performance, well-being, and GPA (e.g., Dello Russo & Stoykova, 2015; Luthans, Avey et al., 2006; Luthans, Avey et al., 2008; Luthans, Youssef et al., 2007; Meyers et al., 2015). The most widely used PCI model is a micro-intervention consisting of a short group workshop (e.g., ranging from one to four hours) that includes various activities designed to increase the HERO resources that comprise PsyCap (Luthans, Avey, et al., 2006). PCI activities used to promote hope include the use of SMART (Specific, Measurable, Achievable, Relevant, and Time-bound) goals, planning for obstacles, and brainstorming alternative pathways (Luthans, Avey, et al., 2006; Salanova & Ortega-Maldonado, 2019). Activities to promote self-efficacy target sources of self-efficacy (i.e., mastery experiences, vicarious experiences, social persuasions, and physiological and affective states) and include visualizations of successful events, hearing from others regarding their goals and successes, receiving encouragement from facilitator and peers,

and learning strategies to manage stress (Lupsa et al., 2020; Luthans, Avey, et al., 2006; Salanova & Ortega-Maldonado, 2019). Development of resilience involves activities designed to recognize and increase personal and organizational resources (assets), identify ways to reduce stress and anticipate and plan for obstacles (risk factors), and learning to set goals (values) and cognitively reframe adverse events (Lupsa et al., 2020; Luthans, Avey, et al., 2006; Masten, 2001; Salanova & Ortega-Maldonado, 2019). Finally, activities to develop optimism include reframing and acceptance of past events, promoting positive and realistic expectations of the present and future, and disputing negative beliefs (Luthans, Avey, et al., 2006; Salanova & Ortega-Maldonado, 2019). It is worth noting that due to the conceptual convergence among the four resources, developing one resource in the PCI often boosts the others (Luthans, Vogelgesang, et al., 2006; Luthans & Youssef-Morgan, 2017).

1.4 THEORETICAL FRAMEWORKS

Application of theories used in educational psychology can provide additional support for the PCI design and the use of PsyCap in academia. Social cognitive theory (SCT) describes how behavior is motivated and regulated by reciprocal interactions between behavioral (e.g., achievement, effort, persistence), environmental (e.g., social models, instruction, feedback), and personal (e.g., cognitions, values, goals) influences (Bandura, 1997; Schunk & DiBenedetto, 2020). Similar to SCT, attribution theory focuses on beliefs about personal control, but additional focus is given to causal explanations individuals make for events that occur. Attributions are a key element in all HERO resources as hope and efficacy rely on internal attributions, whereas optimism and

resilience often depend on external attributions (Luthans, Avolio, et al., 2007; Luthans & Youssef-Morgan, 2017; Pleeging et al., 2021; Snyder, 2002).

SCT and attribution theory both focus on the individual and beliefs they have about their ability (i.e., self-efficacy and locus). These beliefs largely drive an individual's motivation to persist in the face of difficulty and drive to continue pursuit of their personal and academic goals. Taken together, these two theories may help to better understand the mechanisms that influence the HERO resources and contribute to an individual's PsyCap. For example, similar to these theories, many of the HERO resources are expected to involve reciprocal or dynamic processes that motivate behavior (Bandura, 1997; Schunk & DiBenedetto, 2020). The hope cycle consists of the interaction of beliefs about the ability to reach goals (agency) and beliefs about the ability to plan for ways to reach goals and overcome obstacles (pathways, Snyder, 2002). Resilience involves the process of experiencing and adverse event and persisting resulting in positive adaptation (Luthar, 2006; Masten, 2001). It is possible promotion of the processes and dimensions that comprise social cognitive theory and attribution theory could be facilitated through a PsyCap intervention and warrants further consideration.

1.5 SIGNIFICANCE OF STUDY

PsyCap research examining FG students is sparse and no studies to date have tested a PsyCap intervention among FG students. Given the research showing that PsyCap is a positive predictor of GPA, academic adjustment, and engagement among college students generally (Hazan Liran & Miller, 2019; Luthans et al., 2012; Martinez et al., 2019; Reeve & Lee, 2014; Siu et al., 2013; Vanno et al., 2014; You, 2016), there is a unique opportunity to promote the PsyCap of FG students. The current study sought to

address these gaps in the literature by examining PsyCap among FG students and testing the impact of a PsyCap intervention designed to promote academic success and persistence. This study extended research conducted by Luthans et al. (2014) who examined the use of a micro-intervention to develop PsyCap in undergraduate students more broadly and merged practices used in PsyCap interventions and FG student interventions in higher education (Dello Russo & Stoykova, 2015; Dryden et al., 2021; Luthans et al., 2014; King et al., 2017; Stephens et al., 2014).

Given the limited direct application of frameworks widely used in educational psychology to PsyCap research, this study took a theoretically grounded approach by applying social cognitive theory and attribution theory in designing the intervention and interpreting the results. The intervention design in this study included opportunities to hear struggles and successes of FG upperclassmen (vicarious experiences), receive encouragement from FG upperclassmen and other FG students (social persuasion), and learn how interpret and respond to stressful academic situations (psychological and emotional feedback). The intervention design also allowed students an opportunity to identify what is within their control (controllability), take credit for successes experiences (locus), and identify options to persist in the face of adversity, suggesting the hardship will not last forever (stability).

This study also answered calls for future research to include more PsyCap intervention work and longitudinal explorations of PsyCap (e.g., Avey et al., 2010; Barratt & Duran, 2021; Dello Russo & Stoykova, 2015; Hazan Liran & Miller, 2019; Newman et al., 2014). The need for more transparency in the design of PCIs and other interventions designed to target FG students was addressed through efforts to document

the PCI outline and materials used (e.g., script, presentation slides, worksheets) and establish intervention fidelity. Finally, this dissertation contributed to the larger FG and PsyCap literature by examining differences in PsyCap between FG and continuing generation (CG) students, as well as relationships between PsyCap, academic achievement, and persistence.

CHAPTER 2

LITERATURE REVIEW

First-generation (FG) college students often face challenges that impact their academic achievement and persistence. While institutions have implemented programs to address academic deficiencies, there may be untapped potential in leveraging the psychological resources already possessed by FG students, known as Psychological Capital (PsyCap). PsyCap has been widely used in organizational behavior but is a relatively new concept in higher education. Applying PsyCap to FG students could be particularly valuable given the additional obstacles they encounter and exploring factors that contribute to their college degree completion is crucial for promoting upward mobility and opportunities for underserved populations. This chapter provides a more in-depth review of PsyCap to consider its value within academic settings. The review of literature addresses the following questions: (1) what is PsyCap and how can it contribute to academic success? (2) how can PsyCap be developed, and which students are most likely to benefit? (3) how can social cognitive theory and attribution theory help to better understand the mechanisms and impact of PsyCap? In addressing these questions, this chapter also provides insights into the application of the PsyCap construct within higher education and identifies pathways to enhance these resources among college students. Particular attention is given to potential application for first-generation college students.

2.1 PSYCHOLOGICAL CAPITAL CONCEPTUALIZATION

As psychology has examined human behavior over time, researchers have traditionally focused on an individual's deficiencies rather than recognition of strengths and abilities. Recognizing that there was a gap in understanding what makes individuals productive, happy, and capable, psychologist Martin Seligman pioneered the field of positive psychology (Seligman, 1998). PsyCap evolved from the positive psychology movement and originated as an element of positive organizational behavior, which was designed to identify an individual's strengths and psychological capacities in order to maximize performance in the workplace (Luthans, 2002a; 2002b; Luthans, 2012; Luthans & Youssef-Morgan, 2017; Seligman & Csikszentmihalyi, 2000).

According to Luthans, Avolio, et al., (2007) psychological capital (PsyCap) is defined

as:

> …an individual's positive psychological state of development that is characterized by: (1) having confidence (self-efficacy) to take on and put in the necessary effort to
> succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward goals and, when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining, and bouncing back and even beyond (resiliency) to attain success (p. 3).

These four positive psychological resources were included in the positive organizational behavior framework meeting the following criteria: (a) supported by theory and research,

(b) strong validity evidence for measures, (c) state-like nature, and (d) demonstrated impact on desired outcomes (Luthans, 2002a; 2002b; Luthans et al., 2004; Luthans & Youssef, 2004; Luthans, Youssef, et al., 2007). PsyCap resources share a common theme of emphasizing positive appraisals of one's situation and focusing on the potential for success through effort and perseverance (Luthans, Avolio, et al., 2007). The following sections discuss each construct in terms of its more focused definition and placement within the PsyCap framework.

Hope

Hope is a complex construct that has been characterized in a variety of ways, including as an emotion, a character strength, a mood state, an element of motivation, and a result of cognitive processes (e.g., Blöser & Stahl, 2017; Lazarus, 1999; Miceli & Castelfranchi, 2010; Scioli, 2020; Van den Heuvel, 2020). The dominant psychological perspective on hope is attributed to the work of positive psychologist Rick Snyder (1995) who introduced hope as a positive *motivational* state comprised of an interaction of two factors: goal-directed energy (agency) and contingency plans for achievement (pathways). *Agency* consists of an individual's positive beliefs about their abilities to reach their goals and *pathways* involves an individual's beliefs about their ability to plan for multiple ways to reach their goals and overcome any obstacles (Snyder et al., 2002). The interaction of these two factors is referred to as the hope cycle (Snyder, 2000). The PsyCap framework adopts Snyder's view of hope, measuring whether individuals have both the willpower or determination to work toward their goals (i.e., agency), and the waypower or ability to generate alternative paths when faced with obstacles to their goals (i.e., pathways, Luthans & Youssef-Morgan, 2017; Snyder, 2000).

Self-Efficacy

Self-efficacy refers to personal beliefs or views that an individual has regarding their ability to achieve specific tasks in order to accomplish their goals (Bandura, 1977). Self-efficacy beliefs are not an expectation of outcome, they are concerned with what an individual believes they can do, rather than what they will do (Bandura, 1997; Maddux, 2009). An individual's assessment about their abilities serves to determine behaviors they engage in and whether they persist in the face of challenges (Bandura & Locke, 2003; Maddux, 2009). Bandura's work serves as a foundation for the efficacy component of PsyCap. PsyCap efficacy is domain specific, rooted in practice or mastery, allows for improvement, is influenced by others, and is variable. In the workplace, self-efficacy is defined by the belief an employee has about their abilities to produce the necessary motivation, plan of action, or cognitive resources to successfully complete an assigned task (Luthans, Avolio, et al., 2007). In an academic setting self-efficacy is defined by the belief students have in their academic abilities, and the judgements they make about whether they can successfully achieve their educational goals (Honicke & Broadbent, 2016; Schunk & DiBenedetto, 2014; Schunk & Parajes, 2002). Within academic or work settings, self-efficacy is task specific; individuals may experience high self-efficacy for one task but not another (Bandura, 1997; Luthans, Avolio, et al., 2007). PsyCap efficacy developed in one area based on experience may not be readily transferable to another area an individual is less familiar with, but improvement in areas individuals already feel efficacious in is possible (Luthans, Youssef, et al., 2007; Luthans et al., 2015).

Resilience

Resilience is generally thought of as one's ability to bounce back from adversity and most researchers would agree that it is a dynamic process that involves both experiences of adversity and positive adaptation (American Psychological Association, 2014; Luthar, 2006; Sisto et al., 2019). A multidimensional approach (i.e., involves biological, social, and cultural factors) highlights the adaptative capacity for resilience that is distributed across multiple systems that interact with one another and acknowledges that individual resilience interacts with and depends on other systems (Masten, 2001; Masten, 2016). PsyCap resilience largely draws from the work of Masten (2001), focusing on the proactive assessment of risks, assets, and values that impact outcomes. Assets include cognitive abilities, temperament, faith, independence, emotional stability, humor, and relationships (Masten, 2001; Masten et al., 2016; Luthans, Vogelgesang, et al., 2006; Luthans, Youssef, et al., 2007). Risk factors (can hinder resilience) include stress, burnout, dysfunctional experiences, financial strain, and poor health (Luthans, Avolio, et al., 2007; Masten, 2001). Individuals higher in PsyCap resilience are often better at adapting to negative experiences (Luthans, Vogelgesang, et al., 2006).

Optimism

Optimism is generally thought of positive expectations for the future and often operationalized as an optimistic explanatory style or as dispositional optimism. (Forgeard & Seligman, 2012; Carver & Scheier, 2002; Seligman, 1998). An optimistic explanatory style views optimism as dependent on attributions to explain positive and negative events (Forgeard & Seligman, 2012; Seligman, 1998). Optimistic individuals typically make

internal, stable, and pervasive attributions about positive events and attribute negative events to external, unstable, and identifiable causes (Luthans et al., 2004; Seligman, 1998; Weiner, 2010). Dispositional optimism emphasizes expectations regarding future outcomes and includes goal pursuit (Carver & Scheier, 2002; Carver et al., 2010). Optimists generally expect good things to occur and reassert effort when facing adversity (Scheier & Carver, 2018). This view has also characterized optimism as a relatively stable attribute of personality and recognizes the motivational influence of an individual's expectancy about the future (Carver & Scheier, 2014; Scheier & Carver, 2018).

PsyCap optimism integrates both conceptual views. It emphasizes an individual's positive, flexible, and realistic attributions and expectations about current or future endeavors and includes their pursuit of goals (Luthans, 2002b; Luthans et al., 2015; Luthans & Youssef-Morgan, 2017). Studies suggest optimists are not happier because of their positive outlook, but because they maintain a problem-solving focus and utilize effective coping mechanisms (Luthans, Avolio, et al., 2007; Luthans et al., 2015; Seligman, 1998). Some optimism researchers have suggested too much optimism could be unhelpful. Unrealistic optimism has the potential to lead to poor outcomes in health and business though it also has the potential to lead to positive outcomes (Shepherd et al., 2015). Carver & Scheier (2002) reviewed optimism research and highlighted studies indicating optimism could lead someone to ignore important information, persist in situations where they should quit, or overestimate ability to deal with certain difficult situations. It was also suggested that an optimist's worldview may cause them to react more severely to adverse situations than pessimists who might have expected the bad event to happen all along (Carver & Scheier, 2002). Although more research is needed on

the value and costs of unrealistic optimism, generally being optimistic is viewed more as a benefit than detriment (Carver & Scheier, 2014; Forgeard & Seligman, 2012).

Conceptual Convergence & Distinction

PsyCap developers have acknowledged the conceptual convergence among the four resources, sometimes referred to by the acronym HERO (Luthans, Vogelgesang, et al., 2005). Similarities among HERO include a sense of control, intentionality, goal pursuit, and positive appraisal of circumstances that drive probabilities for positive outcomes (Luthans, Avolio et al., 2007; Luthans & Youssef-Morgan, 2017). Despite similarities, there is evidence to suggest the HERO resources are conceptually and psychometrically distinct (Alarcon et al., 2013; Luthans, Avolio, et al., 2007; Luthans, Youssef, et al., 2007; Luthans & Youssef-Morgan, 2017; Seligman & Csikszentmihalyi, 2000; Snyder, 2000). Some distinctions include the nature of the HERO resources and reliance on attributions. Hope, efficacy, and the optimistic outlook are more proactive in nature compared to resilience and the explanatory component of optimism, which tend to be reactive. Internal attributions are more common with hope and efficacy compared to optimism and resilience, which often rely on external attributions (Luthans, Avolio, et al., 2007; Luthans & Youssef-Morgan, 2017; Pleeging et al., 2021; Snyder, 2002). Beliefs about self are more central to efficacy compared to hope, which also includes appraisals of expected outcomes (Bandura, 1997; Snyder et al., 1991). The pathways dimension of hope distinguishes it from optimism, as it includes both self and outcome appraisals and optimism only relates to expectations about an outcome (Luthans et al, 2004; Snyder et al., 1991). Resilience can restore the other HERO resources after a challenging experience promoting the idea that the resources are distinct and work in tandem with one

another (Luthans, Vogelgesang, et al., 2006). Ultimately, researchers suggest the impact of HERO yields greater potential combined than any one resource alone (Luthans, Avey, et al., 2006; Luthans, Youssef, et al., 2007). Together, these resources are designed to help individuals maintain an internalized sense of control and intentionality while goals are being pursued and accomplished.

2.2 PSYCHOLOGICAL CAPITAL MEASURESMENT

There are currently validated self-report and implicit measures of PsyCap (Avey, Avolio et al., 2011; Harms & Luthans, 2012; Luthans, Avolio et al., 2007). The most widely used measure is the 24-item Psychological Capital Questionnaire (PCQ-24, Luthans, Avolio et al., 2007). This self-report instrument was adapted from previously established measures of hope (Adult State Hope Scale, Snyder et al., 1996), self-efficacy (Role Breadth Self-Efficacy, Parker, 1998), resilience (Resilience Scale, Wagnild & Young, 1993), and optimism (Life Orientation Test, Scheier & Carver, 1985). A shorter version of the PCQ-24 was developed because scale length was a concern for use with organizational leaders (Avey, Avolio et al., 2011). The PCQ-24 and PCQ-12 have been used in a number of contexts and adapted for use outside of the business realm (e.g., health, academics, and overall-wellbeing, Avey, Avolio et al., 2011; Luthans et al. 2013; Luthans & Youssef-Morgan, 2017). An implicit measure of PsyCap, the I-PCQ, was also developed to provide more domain and situational specificity measuring responses to various scenario prompts (e.g., someone makes a mistake at work) and allowing participants to invent stories about how individuals in the scenario might think or feel (Harms & Luthans, 2012).

While the PCQ-24 remains the mostly widely used measure, there is variability in the measures used in PsyCap literature. Studies use either abbreviated forms of the measure, the implicit measure, or individual scales designed to measure each of the PsyCap resources (Newman et al., 2014). Potential inconsistencies in the measures used could call into question the results of PsyCap research. Questions have also been raised regarding scoring of PsyCap. Scores are based on a composite total, but many studies report scores as an overall mean calculated using the mean subscale scores and the use of a composite score may fail to accurately represent important individual differences. For example, two individuals could obtain identical composite scores indicating relatively high PsyCap, but the scores do not reveal individual differences among the individual resources (Dawkins et al., 2013). Despite these critiques, the PCQ has been subjected to extensive psychometric analyses and strong empirical support exists for its use across various contexts (e.g., organizational behavior, cross-cultural, academic, Hazan Liran & Miller, 2019; Luthans, Avolio, et al., 2007; Luthans & Youssef-Morgan, 2017; Ribeiro et al., 2021).

2.3 PSYCHOLOGICAL CAPITAL IN ACADEMIA

PsyCap has been empirically tested and widely used in the fields of business and management, but over the last decade, it has been applied to a variety of other settings, including higher education. In the workplace, PsyCap has been shown to have a positive impact on individual attitudes, creativity, job performance, job satisfaction, employee retention, and psychological well-being (e.g., Alessandri et al., 2018; Avey et al. 2010; Gupta & Shaheen, 2018; Peterson et al., 2011; Youssef-Morgan & Luthans, 2015).

Research on PsyCap in academia is still relatively new, but to date, results show similar trends to workplace settings.

Academic PsyCap has been linked to favorable outcomes such as academic achievement, engagement, learning empowerment, and overall student well-being (Barratt & Duran, 2021; Hazan Liran & Miller, 2019; Luthans, et al., 2012; Luthans et al., 2019; Martinez, et al., 2019; Riolli et al., 2012; Slåtten et al., 2021; Sweet et al., 2019; You, 2016). Hazan Liran & Miller's (2019) examination of PsyCap as a resource for enhancing academic adjustment revealed only hope and resilience played a central role in academic outcomes (e.g., GPA) but PsyCap as a construct explained 74% of the variance in students' academic adjustment. Martinez et al. (2019) examined antecedents of academic achievement (e.g., GPA) and found a positive relationship between academic engagement (e.g., students engagement with academic tasks and activities) and PsyCap served as a mediator in the relationship between academic engagement and achievement. Students who were academically engaged experienced higher levels of the PsyCap resources, which positively impacted their achievement (Martinez et al., 2019). Barratt & Duran's (2021) study of distance learning students enrolled in post-graduate online programs found PsyCap negatively predicted burnout and positively predicted engagement among students. Their study also indicated social support served as a moderator to enhance engagement in students with lower PsyCap. Additional studies have shown that PsyCap is fostered by perceived social support and in turn produces positive cognitive appraisals (i.e., mentally reframing neutral or negative situations) and emotional states (Huang & Zhang, 2021; Youssef-Morgan & Luthans, 2015). Although limited research exists exploring the relationship between PsyCap and student

persistence, one exploratory study indicated a significant positive relationship between PsyCap and institutional commitment (Koontz, 2016).

Research on the individual HERO resources illustrates similar findings. Hope has been correlated with superior academic performances across all levels of education, predicted higher GPA, and demonstrated increased graduation rates for high-hope students (e.g., Day et al., 2010; Gallagher et al., 2016; Sierup & Rose, 2011; Rand et al., 2020; Snyder et al., 2002). Research examining self-efficacy has shown it to be a strong predictor of academic performance, adjustment, grade point average (GPA), motivation, and perseverance (e.g., Bartimote-Aufflick et al., 2016; Chemers et al., 2001; Honicke & Broadbent, 2016; Komarraju & Nadler, 2013; Schunk & Parajes, 2002; Steinmayr et al., 2019; Wilcox & Nordstokke, 2019). Resilience contributes to academic achievement and persistence, retention, student engagement, and moderates stress (e.g., Hartley, 2011; Montas et al., 2020; Robbins et al., 2018). Optimism has been linked to academic success, student retention, increased motivation, decreased distress, and improved emotional well-being (Rand et al., 2020; Ruthig et al., 2007; Sewell & Martinez, 2000; Solberg Nes et al., 2009).

2.4 DEVELOPING PSYCHOLOGICAL CAPITAL

Given that the HERO resources are considered to be state-like and relatively malleable (Luthans et al., 2005; Luthans, Youssef, et al., 2007; Luthans & Youssef-Morgan, 2017), development of PsyCap has been promoted in the workplace and education through the use of a Psychological Capital Intervention (PCI). Relevant theoretical frameworks were used to develop the widely used PCI model (Luthans, Avey et al., 2006). The PCI design was empirically tested using management students who

were randomly assigned to experimental and control groups. The experimental group participated in a 1-hour group micro-intervention while the control group completed a non-related intervention (e.g., the Desert Survival exercise). Results of the study indicated the PCI significantly increased levels of PsyCap among participants (Luthans, Avey et al., 2006). Researchers followed this initial study conducting a 2-hour group micro-intervention with managers using the same PCI design and observed similar results (Luthans, Avey, et al., 2006).

Various models of PCIs have since been successfully implemented ranging in duration, (e.g., from 30 minutes to several weeks), type of session (e.g., individual, group, computer-based, face-to-face), model type (e.g., reading intervention, cross-cultural PsyCap training, strengths intervention, micro-intervention), and use of follow-up activities (e.g., weekly tasks, two short homework tasks, weekly phone reminders, none at all, Dello Russo & Stoykova, 2015; Luthans, Avey et al., 2008; Luthans, Youssef et al., 2007; Luthans et al., 2014; Meyers et al., 2015; Salanova & Ortega-Maldonado, 2019). A review of PsyCap interventions used in an organizational setting revealed the average increase in PsyCap post-intervention was between 2% and 4% (Luthans, Youssef-Morgan, et al., 2015; Salanova & Ortega-Maldonado, 2019). Regarding durability of PCI effects, research suggests the gains can be sustained over time (e.g., Bauman, 2014; Dello Russo & Stoykova, 2015; Luthans et al., 2014; Meyers et al., 2015; Zhang et al., 2014). A review of studies using follow up measures indicated the timing of post-intervention measures varied between 2 weeks and six months (Salanova & Ortega-Maldonado, 2019). In one study measuring PsyCap two-weeks post-intervention, PsyCap levels appeared to remain at baseline level, but the waitlist group showed significant

decreases (5.8%) in PsyCap, and differences were statistically significant (Bauman, 2014). Other studies measuring PsyCap levels one-month post-intervention noted increases were maintained and differences between the experimental and waitlist groups were statistically significant (Dello Russo & Stoykova, 2015; Meyers & van Woerkom, 2017). Additionally, a review of PsyCap intervention literature found that studies that used waitlist controls provided a medium effect size (Lupsa et al., 2020). There do not appear to be significant differences in the impact of a PCI based on type of session (Salanova & Ortega-Maldonado, 2019).

Though interventions used in education are limited, preliminary studies suggest PsyCap can be developed using the PCI model developed by Luthans, Avey et al., (2006) and increases are generally sustained over time. One study using the PCI design in a 2-hour micro-intervention adapted for education asked undergraduate business students to consider their academic goals and identify challenges or obstacles that are related to their academic goals. The PCQ-24 and the adapted version for the academic setting were administered prior to the intervention and again 8-weeks later. Results of the study indicated both academic PsyCap and overall PsyCap significantly increased after the intervention (Luthans et al., 2014). Another study facilitated a 3-hour PCI micro-intervention in separate session with students and professionals and results illustrated statistically significant improvements in PsyCap after the micro-intervention and were sustained once measured again one-month post-intervention (Dello Russo & Stoykova, 2015). Additional PCIs applied in educational settings have also shown to be successful in increasing students' overall PsyCap (Bauman, 2014; Gomes da Costa et al., 2021) and positively impacting specific outcomes, such as performance, well-being, and GPA (e.g.,

Dello Russo & Stoykova, 2015; Luthans, Avey et al., 2006; Luthans, Avey et al., 2008; Luthans, Youssef et al., 2007; Meyers et al., 2015). A recent mixed methods systematic review examining the impact of PCIs in both the educational and workplace settings highlighted the model's effectiveness in increasing the total PsyCap of individuals (Xu et al., 2021). PCI research examining direct links to student persistence is limited; therefore, there is a need to explore it's impact especially among diverse groups of students.

2.5 FIRST-GENERATION STUDENTS & PSYCHOLOGICAL CAPITAL

Although many students may benefit from the development of their PsyCap, it could be most beneficial to student populations that have historically faced additional barriers to success. One population of interest, first-generation students (FG), make up approximately 33% of the college student population (NCES, 2018), and typically show lower student retention and graduation rates than their continuing generation (CG) peers. Research also suggests the difficulties some FG students face can compound when their status intersects with other marginalized identities (e.g., race, gender, age, socioeconomic status, House et al., 2020; Ives & Castillo-Montoya, 2020; Patel, 2020). There are varying ways in which first-generation students are defined. Many institutions use the federal definition applied to assess eligibility for TRIO Programs and federal Pell Grants defining FG students as individuals whose parents or guardians have not earned a baccalaureate degree (Higher Education Act, 1965, 1998). Others define FG students as individuals whose parents or guardians have had no postsecondary education experience and have a high school education or lower level of educational attainment (Cataldi et al., 2018; Chen, 2005; Ishitani, 2006; Pascarella et al., 2004). While there is no general consensus among researchers on how broad or narrow the definition should be, some

research suggests gaps in outcomes are largest for the most-restrictive definitions (e.g., neither parent nor guardian attended college at any level, Patel, 2020; Toutkoushian et al., 2018). Therefore, use of a more restrictive definition of FG student status may serve to better capture these students' needs and experiences.

Regardless of how they are defined, research indicates FG students are likely to be from low-socioeconomic backgrounds and often include historically underrepresented ethnic or racial groups (Engle, 2007; Center, 2017; Gibbons et al., 2019; House et al., 2020; Toutkoushian et al., 2021). Research suggests FG students face additional challenges in college (e.g., lack of family support, increased financial demands, less academically prepared; lower sense of belonging) compared to their continuing-generation (CG) peers that can threaten their academic achievement, persistence, and overall well-being (Cataldi et al., 2018; Engle, 2007; House et al., 2020; Pascarella et al., 2004; Pratt et al., 2019; Radunzel, 2021; Stebleton & Soria, 2012; Toutkoushian et al., 2021). When FG status intersects with other marginalized identities (e.g., race, gender, age, socioeconomic status) these difficulties are exacerbated (House et al., 2020; Ives & Castillo-Montoya, 2020).

Existing interventions to address these issues often target risk factors for FG students, including increased financial demands of college, lower academic preparation, and feelings of social disconnectedness on campus. Campus programs are often designed to combat risk factors through access to financial aid, increased academic support (e.g., tutoring, supplemental instruction), first-year seminar courses, appreciative academic advising, pre-college programming, and midterm reporting of grades (Castillo-Montoya & Ives, 2021; Pratt et al., 2019). While these programs have been shown to contribute to

the success of many FG students, this approach may overlook opportunities to build upon the strengths and psychological resources FG students have (Hands, 2020; Macias, 2013; Minicozzi & Roda, 2020). Alternatively, adopting an *asset-based approach* involves focusing on an individual's strengths and purposefully recognizing abilities and knowledge students possess based on their lived experiences (Hands, 2020; Whitley et al., 2018), which may align more closely with the design of PsyCap interventions given its connections to positive psychology.

PsyCap research examining FG students is limited and there have been no studies to date that have tested a PsyCap intervention among FG students. Investigations of the HERO resources among the FG student population indicate FG students tend to report lower self-efficacy compared to their CG peers (Majer, 2009; Pascarella et al., 2004; Ramos-Sánchez & Nichols, 2007). While some FG students indicate higher levels of resilience as they enter college due to previously encountered adversity, research suggests these levels of resilience may not effectively transfer to academic changes and related stress, nor result in persistence (Alvarado et al., 2017). FG students may benefit from additional support to leverage these skills. There is limited research on optimism and hope among FG students as many of the studies fail to parcel out FG and CG student populations. Given the research showing that PsyCap is a positive predictor of GPA, academic adjustment, and engagement and has been linked with student persistence (Hazan Liran & Miller, 2019; Luthans et al., 2012; Koontz, 2016; Martinez et al., 2019; Reeve & Lee, 2014; Siu et al., 2013; Vanno et al., 2014; You, 2016), there is a unique opportunity to consider the application of PsyCap for FG students.

2.6 THEORETICAL FRAMEWORKS

Various theories rooted in positive psychology and educational psychology have been used as frameworks to develop PsyCap and ground research. PsyCap research examining the role of emotions has often relied on the broaden-and-build theory (Fredrickson, 2001). Broaden-and-build is rooted in positive psychology and suggests experiences of positive emotions (e.g., hope, joy, interest, contentment) serve to broaden an individual's thought-action repertoires, which aids in the building of their personal resources (e.g., physical, intellectual, social, psychological; Fredrickson, 2001; 2004). The use of broaden-and-build within PsyCap research in the workplace has been used to explain the impact of positive emotions/positivity on employee well-being, increased self-efficacy and resilience, and greater organizational commitment (e.g., Abbas & Raja, 2015; Da et al., 2021; Gupta & Shaheen, 2018; Ribeiro et al., 2021 Schutte, 2013). In higher education, the theory has been used to understand the role of positive emotions in improved social connections, enhanced attentional flexibility, and as a mediator between supportive study climate and academic performance (e.g., Fredrickson, 2013; Slåtten et al., 2021; Waugh & Fredrickson, 2006). Given the interest in application of PsyCap and PCIs on educational outcomes (i.e., academic success, persistence), theories widely used in educational psychology may provide a meaningful and complementary lens. Some previous PsyCap research has used social cognitive theory, but limited attention has been given to the application of attribution theory. Both social cognitive theory and attribution theory have been linked to student success, engagement, and persistence (Bartimote-Aufflick et al., 2016; Chemers et al., 2001; Gaier, 2015; Komarraju & Nadler, 2013; Lee

& Hall, 2020; Steinmayr et al., 2019; Wilcox & Nordstokke, 2019). Additionally, many of the key components of PsyCap appear to share connections with these two theories.

Social Cognitive Theory

Social cognitive theory (SCT) describes how behavior is motivated and regulated by reciprocal interactions between behavioral (e.g., achievement, effort, persistence), environmental (e.g., social models, instruction, feedback), and personal (e.g., cognitions, values, goals) influences (Bandura, 1997; Schunk & DiBenedetto, 2020). At the core of SCT is self-efficacy: an individual's belief regarding their ability to achieve (Bandura, 1997; 2001). Efficacy is developed over time, and individuals use four sources to assess their self-efficacy: mastery experiences, vicarious experiences, social persuasions, and physiological and affective states (Bandura, 1997; Schunk & DiBenedetto, 2020).

Positive mastery experiences (or performance accomplishment) may have the greatest impact on academic self-efficacy by giving students confidence they have what they need to be successful (e.g., Bandura, 1997; Luthans et al., 2004; Schunk & DiBenedetto, 2014; Schunk & DiBenedetto, 2020). Vicarious experiences typically involve learning by observing others' mastery experiences. They can positively contribute to an individual's self-efficacy; especially when those being observed are considered to be role models or trustworthy sources (Bartimote-Aufflick et al., 2016). Additionally, there is evidence to suggest that observing others who experience difficulties but persist, improves self-efficacy of individuals better than observing someone with a perfect performance from the start (Schunk & DiBenedetto, 2020). Social persuasions refer to messages from influential individuals or groups (i.e., peers, mentors, Bandura, 1997) and might include words of encouragement like, "You can do it!"

(Schunk & DiBenedetto, 2020). Social persuasion can encourage effort and academic self-efficacy when students face challenges or doubt their ability to succeed (Bandura, 1997; Bartimote-Aufflick et al., 2016; Fong & Krause, 2014; Won, et al., 2017). However, successful performance is needed in combination with persuasion for increases in self-efficacy to endure (Schunk & DiBenedetto, 2010). Some research suggests social persuasion has a less enduring impact during experiences of failure (Bandura, 1977; Schunk & Pajares, 2009). Individuals who want to effectively utilize social persuasion to influence the self-efficacy beliefs of others must do so simultaneously while ensuring student success is actually attainable (Schunk & Pajares, 2009). The final source of efficacy comes from an individual's physiological and emotional feedback. Individuals often rely on how they feel both physically and emotionally to interpret their abilities. Interpretations of stress reactions during difficult tasks can serve as indicators of ability or lack thereof (Bandura, 1997; Luthans et al., 2004; Travis et al., 2020). Individuals who are not overcome with stress and anxiety during a difficult task may interpret their reaction as a sign of competence and demonstrate greater self-efficacy (Schunk & DiBenedetto, 2020; Travis et al., 2020).

Given that these four sources can serve to promote, or deter, an individual's self-efficacy, they will be important to feature in the application of PsyCap within higher education for FG students. Of the HERO resources included in PsyCap, self-efficacy has the strongest theoretical foundation and empirical base (Luthans, Avolio, et al., 2007). Self-efficacy is linked to important motivational processes that can promote academic success and persistence (e.g., Bandura, 1997; Fong & Krause, 2014; Komarraju & Nadler, 2013; Schunk & DiBenedetto, 2020). Additionally, SCT has been used to

understand and explain educational development and adjustment of FG students, and research indicates increases in self-efficacy and engagement result in better academic outcomes and persistence for FG students (e.g., Conefrey, 2021; Gibbons et al., 2019; Metcalf & Wiener, 2018). Providing opportunities for mastery, observing other FG students' success, engaging with faculty, and learning to manage stress could be key in developing PsyCap resources that can contribute to FG student success.

Attribution Theory

Attribution theory focuses on beliefs about personal control, but additional focus is given to causal explanations individuals make for events that occur. Attribution theory suggests individuals seek to explain their behaviors as a result of causal success or failure (Weiner, 1985; 2010). For example, they may attribute the cause of the outcome to personal effort, innate ability, other people, or luck. Attributions follow an event or outcome (e.g., receiving a grade, learning a new skill) and initial responses usually include outcome-dependent emotions (e.g., happiness, sadness). Individuals interpret the outcome as either a success or failure and often engage in an internal investigation about what caused the event (Cook & Artino, 2016; Graham, 2020). Attribution research indicates this causal thinking can have a significant impact on learning and motivation outcomes (Weiner, 2010; 2018). Many attributions are subconscious and likely influenced by past experiences and patterns, as well as culture (e.g., collectivist, individualist) and gender (Cook & Artino, 2016; Graham, 2020; McClure, et al, 2011; Weiner, 2010). Attributions typically fall into at least one of three causal dimensions: *locus, stability, or controllability*.

Locus is concerned with whether the cause of success or failure is determined to be internal or external. For example, a student who passed an exam may attribute the good grade to their ability (internal) or luck (external). Locus can promote feelings of pride and high self-efficacy when successes are attributed to internal factors but can also elicit feelings of shame or guilt if failures are linked to internal causes (Weiner, 2010; 2018). Attributions students make about their success are found to be better predictors of achievement than attributions for failure (Gaier, 2015; McClure, et al., 2011). *Stability* is an evaluation of the duration of a cause and whether or not it is determined to be stable (lasting) or unstable (temporary). For example, a student might attribute a poor grade on an exam to aptitude (lasting) or lack of time to study (temporary). Stability attributions can influence perceived expectancy of success. Individuals must determine whether the cause of an event is something that likely to change or something they believe is fixed (Weiner, 2010). Finally, *controllability* requires an assessment of whether the cause of the event is within one's control or outside of one's control (Weiner, 2010). For example, a student receives a poor grade and attributes it to their noisy roommate (uncontrollable) versus attributing the poor grade to only having studied two hours (controllable). An attribution that an eventual outcome is outside of their control and unable to be changed often leads to high levels of stress and emotional exhaustion as well as procrastination and reduced motivation or amotivation (Gaier, 2015; Lee & Hall, 2020). Adopting controllable attributions (e.g., effort, strategy) has been linked with reduced course failure and changes in learning behaviors (Haynes Stewart et al., 2011; Schunk & Zimmerman, 2006).

In considering the application of PsyCap in higher education, it is important to recognize students regularly make attributions about their academic experience which can impact achievement and persistence (García-García, 2021; Graham, 2020; Respondek et al., 2019) and control beliefs have been found to be the strongest psychosocial predictor of GPA (Aspelmeier et al., 2012; Richardson et al., 2012; Schneider & Preckel, 2017). When a student performs poorly, their attribution is linked to future decision making and engagement. When students attribute academic setbacks to uncontrollable causes, it negatively impacts motivation and future performance and results in a cycle of hopelessness. On the other hand, when students attribute events to controllable causes, they are more inclined to believe in their ability to improve and overcome challenges which fosters a sense of agency and motivation that can lead to increased effort and improved performance. Attribution interventions typically target causal beliefs and related emotions as well as an individual's beliefs about self and others (Graham, 2020). Attribution theory has been minimally applied in order to understand the academic experiences of FG student samples (Dryden et al, 2021; Guiterrez-Serano et al., 2022), but one attribution-based motivation intervention for FG students demonstrated increases in control attributions sustained over time (Dryden et al., 2021).

Taken together, these theories provide a framework for understanding cognitive processes that contribute to the development of PsyCap among students. These theories can be used to guide the design of PsyCap interventions by providing opportunities for students to engage in activities that foster self-efficacy and adaptive attributions. A PsyCap micro-intervention can provide an opportunity for FG students to hear from peers who have struggled and been successful (vicarious experiences), receive encouragement

as they tackle difficult academic challenges (social persuasion), and identify ways to respond to stressful academic situations (psychological and emotional feedback), which may promote positive feelings that in turn boost self-efficacy. While mastery experiences may take more time to develop than in a micro-intervention, it may help to set the foundation for these experiences. Additionally, PsyCap interventions can allow individuals to identify what is within their control (controllability), take credit for successes experiences (locus), and identify options to persist in the face of adversity, suggesting the hardship will not last forever (stability).

2.7 CURRENT STUDY

There is a scarcity of PsyCap research among FG students and no studies to date have investigated the effectiveness of PsyCap interventions for this population. The current study addresses gaps in the literature by exploring PsyCap among FG students and examining the effects of a PsyCap intervention. The intervention in this study builds upon prior research integrating practices from PCIs (Luthans et al., 2014) and FG student interventions (Stephens et al., 2014). Social cognitive theory and attribution theory are used as frameworks to guide the design of the intervention, as well as aid in understanding the development of HERO resources and application of PsyCap in academia. Furthermore, this study aims to complement existing approaches supporting FG students given disparities in academic performance and persistence still exist when compared to their CG peers and provides a level of transparency in design to allow for replication.

The primary purpose of this dissertation is to implement a brief PsyCap intervention among FG students to test whether this led to an increase PsyCap, sustained over time,

and positively impacted academic achievement, and persistence. A second goal is to examine naturally occurring differences in PsyCap among FG and CG students, as well as relationships between PsyCap, academic achievement, and persistence. To address the aims of this study, the primary research questions are as follows:

1. Are there differences in psychological capital (PsyCap) among first-generation (FG) and continuing generation (CG) students?
2. What is the relationship between PsyCap, GPA, and persistence?

3a. What is the effect of the PsyCap Intervention (PCI) on academic PsyCap among FG students?

3b. What is the effect of the PCI on academic achievement (GPA) among FG students?

3c. What is the effect of the PCI on persistence (enrollment intentions) among FG students?

Given examinations of PsyCap among FG students are sparse and research on the HERO resources often fails to parcel out FG and CG student populations, the first research question is largely exploratory. Some research indicates FG students report lower self-efficacy than their CG peers (e.g., Hood et al., 2020; Ramos-Sánchez & Nichols, 2007), but other studies suggest a higher academic self-concept (Atherton, 2014; Elliott, 2014). Additionally, some FG students show higher levels of resilience as they enter college, but the levels of resilience may not effectively transfer to academic changes nor result in persistence (Alvarado et al., 2017). Examinations of FG students' hope and optimism are limited, but qualitative data suggests FG students possess high hope and optimism (Garrison & Gardner, 2012). Regarding the second research question, based on

existing research demonstrating positive links between PsyCap and academic achievement (GPA, Luthans et al., 2019; Martinez et al., 2019; Sweet et al., 2019) and institutional commitment (Koontz, 2016) it was expected that PsyCap, GPA, and persistence would be positively related. Finally, informed by research showing the positive impact of PCIs in workplace and educational settings (Bauman, 2014; Gomes da Costa et al., 2021; Luthans et al., 2014; Salanova & Ortega-Maldonado, 2019) and the durability of PCI effects (e.g., Dello Russo & Stoykova, 2015; Meyers et al., 2015; Zhang et al., 2014), it was expected the PCI would increase students' PsyCap, gains would be sustained over time, and GPA and persistence would be positively impacted. In addition to these primary research questions and hypotheses, the research sought to explore FG students' feedback on the workshop and academic needs through a more descriptive and exploratory approach.

CHAPTER 3

METHOD

3.1 PARTICIPANTS

Undergraduate students were recruited from a medium-sized public university in the Southeastern United States (approximately 6,500 undergraduate students enrolled). There were two key components to the design (survey and intervention) that corresponded to three time points: pre (Time 1/T1), post (Time 2/T2), and retention (Time 3/T3), described in more detail below. Demographics for the survey sample (N = 607) are shown in Table 3.1. This sample was predominately white (62%), female (76%), freshmen (45%), and a mean age of 20.93 years (SD = 5.31). Demographics for the intervention sample (N = 28) are shown in Table 3.2 The sample was also predominantly white (54%), female (79%), freshmen (75%), with a mean age of 19.22 years (SD = 3.88). Participant recruitment and sample information is outlined below and illustrated in Figure 3.1. There were two primary phases for recruitment: the initial survey and an intervention.

For the initial survey, participants were recruited through first-year seminar and psychology undergraduate courses, as well as the TRIO Programs Office. The minimum sample size for research question 1 (RQ1) analysis (comparison of PsyCap among FG and CG students) was determined using G*Power 3.1.9 (Faul et al., 2009). Given that this area of research is emerging, results of a meta-analysis of PsyCap research (Avey, Reichard, et al., 2011) suggest a medium effect size.

The alpha level was set to .05, and the statistical power was set to .80 (Araujo & Frøyland, 2007). Power analysis indicated that a minimum of 128participants were needed to detect medium-sized effects (Cohen's d = .05) for an independent samples t-test (Kelly & Preacher, 2012). The initial survey received 659 responses. After removal of partials (28), graduate students (18), duplicates (4), and spurious responses (i.e., straight-lining, 2), 607 participants met criteria and were used in analyses. The minimum sample size for research question 2 (RQ2) analysis (relationship between PsyCap, GPA, and persistence) was also determined using G*Power 3.1.9 (Faul et al., 2009). Power analysis indicated that a minimum of 84 participants was needed to detect a medium effect (Pearson's r = .30, alpha = .05, power = .80) for bivariate correlations. Medium effect size was selected based on previous research exploring these variables (Carmona-Halty et al., 2019; Luthans et al., 2012).

For the PsyCap intervention, participants were recruited from the initial online survey. Students met recruitment criteria for intervention if they: (1) reported first-generation status (parent/guardian did not enroll in postsecondary education) and (2) indicated interest in the 2-hour workshop. Given that student persistence (enrollment intentions) was an outcome measure, seniors (students who have earned 90 credit hours or more) were removed from the potential pool of participants (n = 37) as they may not have the same opportunity for continued enrollment. The minimum sample size for research question 3 (RQ3) analysis (impact of PCI on PsyCap among FG students) was determined using G*Power 3.1.9.2 (Faul et al., 2009). A meta-analysis of PsyCap interventions targeting overall PsyCap revealed small effect sizes, however, studies with waitlist control groups provided a medium effect size (Lupsa et al., 2020). Power analysis

indicated that a minimum of 28 participants was needed to detect a medium effect of partial $\eta^2 = .06$ ($f = 0.25$) with 80% power for a 2x3 mixed factorial ANOVA, within-between interaction (two groups, three measurements, alpha = .05, non-sphericity correction = 1). Of the FG students meeting inclusion criteria (non-senior status), 61 (47%) indicated "yes" regarding their interest in the workshop. Those FG student participants were randomly assigned to either the treatment or control group (31 treatment, 30 control). FG participants who indicated "maybe" regarding interest in the workshop ($n = 44$, 34%) were added to the participant pool (22 treatment, 22 control) after the first workshop was facilitated in an attempt to increase participation. The workshop was offered on three occasions (participants enrolled only once). The treatment group members ($n = 18$) received the intervention, and the control group ($n = 16$) was placed on a waitlist with the option to participate in the following semester (Spring 2023). All intervention participants ($N = 34$) completed the T2 survey. Due to attrition at T3 (6 participants did not respond), the final sample included in analysis was 28 participants ($n = 17$ treatment, $n = 11$ control).

3.2 RESEARCH DESIGN

The study employed two types of design: (1) a survey design to examine differences between FG and CG students and correlations between PsyCap and academic outcomes; (2) an experimental design to test the impact of the PsyCap intervention (described below). An overview of the research design is illustrated in Figure 3.2. For the intervention, eligible participants who met first-generation status were randomly assigned to either the treatment or control condition. Data from open-ended questions was also

collected to further understand the individual HERO resources and students' academic experiences.

3.3 MEASURES

Demographics. Participants reported demographics, including age, gender, race/ethnicity, parents'/guardians' highest level of education, annual household income, full/part-time status, work status, year of university, major/concentration, highest degree plan to earn, standardized test sore (ACT/SAT), and grade point average (GPA). Items that were used as key variables in the study are described in more detail below.

Generational Status. Participants' self-report of parents'/guardians' highest level of education was used to determine generational status. Guided by previous research (Patel, 2020; Toutkoushian et al., 2018), a narrow definition of FG students was used in this study in order to examine the experiences and challenges faced by students who are among the first in their families to attend college. Students who indicated parents/guardians did not pursue postsecondary education (i.e., parent/guardian education is either less than high school diploma, high school diploma) were identified as first-generation (FG). Students who indicated parents/guardians attended or earned a four-year degree or higher (i.e., Some college, Bachelor's degree, Master's degree, Doctoral or Professional degree) were identified as continuing generation (CG).

Academic achievement. Participants' self-reported GPA was used to assess academic achievement. Self-report of GPA is often used in educational research and there is support for a strong correlation between self-reported GPA among college students (Cassady, 2000), although some research suggests students may report slightly higher GPAs than their actual GPA (Herman & Nelson, 2009). At pre intervention, participants

reported cumulative college GPA, which was used in correlational analysis. At retention, participants reported semester GPA and cumulative GPA. In addition, participants could provide permission for the PI to verify GPA through academic records. There were relatively strong correlations between students' reported semester, cumulative GPA, and verified GPA, suggesting self-report was a reasonable indicator.

Psychological Capital. The 24-item Psychological Capital Questionnaire (PCQ-24, Luthans, Avolio et al., 2007) measures each of the four PsyCap resources: hope, self-efficacy, resilience, and optimism (6 items per dimension) using a 6-point Likert scale from 1 (*strongly disagree*) to 6 (*strongly agree*).The PCQ-24 was developed by adapting existing measures of hope (Adult State Hope Scale, Snyder et al., 1996), self-efficacy (Role Breadth Self-Efficacy, Parker, 1998), resilience (Resilience Scale, Wagnild & Young, 1993), and optimism (Life Orientation Test, Scheier & Carver, 1985). Sample items include: "I feel confident analyzing a long-term problem to find a solution", "If I should find myself in a jam at work, I could think of many ways to get out of it". Higher scores indicate higher PsyCap. Previous research has demonstrated acceptable to strong internal reliability (Luthans, Avolio, et al., 2007; Luthans et al., 2012; Luthans & Avey, 2014) and support for the higher-order structure of the measure (Dawkins et al., 2013; Luthans, Avolio, et al., 2007). The PCQ-24 scale has been used in several contexts and adapted for use outside of the business realm, including academic settings, which converts the language of the PCQ-24 from "work" or "job" to "schoolwork". Both the overall PsyCap and academic versions were used in this study, consistent with previous research (Luthans et al., 2014). Overall PsyCap and academic PsyCap scores were

calculated by averaging the total of subscale scores. Scores for each PsyCap resource were calculated by averaging items in each subscale.

Scale reliability for this study was examined for the T1 sample and results are included in Table 3.3. Analysis of internal scale consistency of the overall version and academic version (PCQA-24) revealed a Cronbach's alpha of .90 for both versions demonstrating a strong level of reliability. This is consistent with PsyCap literature which suggests acceptable to strong reliability (>.80) of the PCQ-24 overall scale and (>.89) the academic version (Luthans, Avolio, et al., 2007; Luthans et al., 2012; Luthans & Avey, 2014; Luthans et al., 2014). Analysis of the individual HERO components revealed an acceptable level of reliability for overall PsyCap hope, efficacy, and optimism (α = .80, .78, .76) and academic PsyCap hope, efficacy, and optimism (α = .79, .78, .72). Analysis demonstrated a lower level of reliability for the resilience component on both the overall and academic versions (α = .63). Removing items would not improve the level of reliability.

Persistence. Persistence in higher education is often defined as continued enrollment (or degree completion) at any institution (Gardner, 2022). For this study, persistence was measured using the four items that comprise the institutional commitment subscale in the College Student Persistence Questionnaire (CPQ, Davidson et al., 2009). Answers are converted to a 5-point favorability score based on whether the response indicated something positive or negative about the student's college experience *(-2 = very unfavorable, -1 = somewhat unfavorable, 0= neutral, +1 = somewhat favorable, +2 = very favorable*, Davidson et al., 2015). In this study, the original scoring of the Likert scale was used to produce a persistence score rather than converting the

answers. The CPQ has been used widely by institutions of higher education and shown to be a reliable measure of persistence among college students (Betts et al., 2017; Davidson et al., 2009; Davison et al., 2015; Muller et al., 2017). The institutional commitment subscale has shown to be strongest predictor of persistence outcomes (i.e., students who score high on the institutional commitment subscale were more likely to continue to enroll or attain degree completion than if they scored high on any of the other subscales). Sample items include, "How likely is it that you will earn a degree from here?" and "How likely is it that you will reenroll here next semester?" These items use a 5-point Likert scale ranging from 1 (*very unlikely/unconfident/little*) to 5 (*very likely/confident/much*). In addition to the items from the CPQ, a demographic item at T1 (i.e., collecting highest level of education students plan to earn) was also used to illustrate educational goals. At T3, there was also an item allowing participants to provide permission for the PI to verify spring enrollment.

Support Services. Support services can be an important factor in the success and persistence of students generally and can be of particular importance for FG students (D'Amico Guthrie & Fruiht, 2020; Hurd et al., 2016). Using a checklist, participants were asked to report support services they used or planned to use. Options included tutoring, supplemental instruction, TRIO Programs, Opportunity Scholars, peer mentoring, faculty mentoring, career coaching, and academic advising, and 'other' supports. Participants had the opportunity to write in responses for "other".

Workshop Feedback. Participants who completed the PsyCap workshop had an opportunity to provide feedback at T2 and T3. Items at T2 used a 4-point Likert scale ranging from 1 (*Not engaging/useful/reasonable*) to 4 (*Very engaging/useful/reasonable*),

and items at T3 used a 6-point Likert scale ranging from 1 (*strongly disagree*) to 6 (s*trongly agree*). Participants were also asked to respond to which activities they found most and least useful and prompted with open-ended items. Sample items include, "To what extent was the workshop useful", "The success workshop activities/discussions gave me more confidence in my academic potential this semester." and "Describe in what way (if any) you applied the activities/discussions from the success workshop this semester."

FG Student Experience. At T3 participants had a chance to respond to open ended questions in order to gain a greater understanding of their academic experience. Participants also had the option to share any additional feedback they may have had. Items included, "What academic challenges (if any) did you face this semester?", "What programs or resources do you wish your college offered to help improve first-generation students' experience?", and "If you were giving one piece of advice to another first-generation student, what would it be?"

3.4 PROCEDURE

Ethics approval was granted by the Institutional Review Board for human subjects research prior to data collection. All surveys (see Appendix A) were administered via a secure online survey tool, Alchemer. Reminder emails were sent after each survey administration and incentives were offered to participants in the form of monetary compensation, extra credit, and a draw.[1] Surveys were administered at three time points (pre, post, retention). Each survey took approximately 15-20 minutes to complete.

[1] Extra credit offered by undergraduate course instructors when applicable. All T1 participants entered into a draw for a chance to win $100, At T2 (treatment group: $25 for workshop participation, $10 for survey completion; control group: $10 for completion of survey and T3 (treatment and control groups: $10 for survey completion; entered into a draw for $150.

Specific procedures are outlined below, starting with surveys by time period, followed by a description of the PsyCap intervention.

Surveys

Time 1 survey (pre intervention) was distributed the second week of the Fall 2022 semester (starting August) and was available for approximately two weeks (completed by September). Faculty and programs shared the electronic survey link through email or the online university learning management system. The survey measured demographics, PsyCap, persistence, use of/plans to use academic resources, academic challenges and needs (open-ended items). At the end of the survey, respondents indicated whether they would be interested in participating in a workshop designed to develop psychological resources and strategies for academic success. Participants who indicated interest in the workshop and met FG student criteria were randomly assigned to either the control group (waitlist) or treatment group (intervention). Time 2 survey (post intervention) was distributed via email by the principal investigator to the treatment and control groups immediately following the workshops (starting in September) and available for approximately two weeks (completed by October). This survey measured PsyCap, use of/plans to use academic resources, PCI workshop (treatment group). Time 3 survey (retention) was distributed by the principal investigator to both the treatment and control groups during finals week (starting in December) and available for one month due to the winter break (completed by January). This survey measured PsyCap, use of academic resources, academic achievement (GPA), persistence, academic challenges, needs, advice for first-generation students (open-ended), and feedback on the PCI workshop (treatment group).

PsyCap Intervention

The research study used the PCI model developed by Luthans, Avey et al. (2006) as a framework and included additional activities linked with development of HERO resources and tailored to FG students to account for their unique needs and experiences (Luthans et al., 2014; King et al., 2017; Stephens et al., 2014). The PCI workshop in this study lasted approximately two hours and was offered three times in the fall semester (e.g., September-October). Participants completed the activities in the same order and time frame. The workshop involved individual and small groups activities, as well as larger group debriefs. The PCI design is further detailed below (see Appendix B for outline of activities and links to HERO resources).

The workshop was facilitated by the study PI. Attendees included a research assistant/observer (conducted intervention fidelity check), three to four first-generation upperclassmen (served on panel and help facilitate small group discussion), and workshop participants (FG students). The workshop began with a welcome and overview, followed by introductions (approximately 13 minutes). Each participant was given a workshop packet to guide activities (see Appendix C).

In keeping with the Luthans, Avey, et al., (2006) model, the first activity involved goal setting (approximately 35 minutes). The facilitator led a short discussion on setting effective goals using the SMART framework (i.e., Specific, Measurable, Attainable, Relevant, Time-bounded). Participants identified two to three academic goals for the near future that were personally valuable to them and chose one to focus on throughout the workshop (e.g., earning a B in anatomy this semester). Participants generated pathways to the goal and anticipated potential obstacles and ways to overcome these. They were then

placed into small groups where participants shared goals, plans, and feedback with peers (to advance ideas with additional solutions and perspectives). Finally, there was *positive brainstorming* time in which participants were asked to contribute positive quotes or thoughts that could inspire and support their peers as they worked toward their goals. Participants were then given time to inventory pathways, identify realistic pathways, and discard unrealistic pathways. The facilitator debriefed the activity in the large group. After completion of the first activity, participants had defined a personally valuable academic goal, identified potential obstacles, and were ready to implement multiple pathways as contingency plans.

The second activity focused on academic setbacks and successes (approximately 45 minutes). The facilitator provided an overview of academic setbacks and successes and why it is relevant. Participants were then asked to identify a recent *setback* within the academic domain, including major (e.g., failing a test) or minor events (e.g., not doing well on a homework assignment). Participants used their worksheet to describe their immediate reactions to the identified setback (e.g., feelings, thoughts, actions), consider the impact of the setback, and identify what was within their control, what was out of their control, and options for acting. Participants also identified a recent academic *success* in a similar process. The facilitator discussed the importance of acknowledging successes and responding to setbacks and demonstrated how to mentally reframe a setback (e.g., identify the situation, consider feelings, take note of automatic thoughts, reframe the situation). Participants returned to their small groups, discussed their experiences and thoughts about responding to setbacks and successes. Participants then had the opportunity to reframe the setback using the methods demonstrated by the facilitator.

The facilitator then debriefed the activity in the large group before moving on sharing additional approaches to respond to academic setbacks (e.g., developing adaptive coping strategies, avoiding thinking traps, identifying academic and personal resources). By the end of the second activity, participants had acknowledged contributions to an academic success, reframed an academic setback, and identified ways to deal with future setbacks.

The final activity involved an FG upperclassmen student panel discussion (approximately 15 minutes). Adapted from the difference-education intervention conducted by Stephens et al. (2014) with FG students, the FG upperclassmen panelists were asked to respond to a series of questions to illustrate their FG student experiences and strategies used to be academically successful and encourage persistence toward their degree. Questions were provided to FG panelists in advance and included the following: What did coming to college mean to you?"; "What was the transition to college like for you?"; "Did your decision to attend college affect your relationships with your friends and family at home?"; "What would you advise other students to do with backgrounds similar to your own?"; "How have you dealt with academic setbacks/challenges?". Panelists selected which questions they wanted to respond to, and workshop participants were also invited to ask questions. After the final activity, participants heard challenges other FG students faced and strategies used to overcome them in order to persist and be academically successful. The workshop concluded with the facilitator providing a recap of activities and encouraging participants to use the new processes discussed (approximately 3 minutes).

The intervention design contained several elements of social cognitive theory and attribution theory. The intervention included opportunities to hear struggles and successes

of FG upperclassmen in the small group work and through the student panel (vicarious experiences). Participants received encouragement from FG upperclassmen, other FG students, and the facilitator throughout the workshop (social persuasion). Participants learned how to interpret and respond to stressful academic situations through small group discussion and facilitator instruction (psychological and emotional feedback). The intervention design in this study also allowed students an opportunity to identify what is within their control (controllability), take credit for success experiences (locus), and identify options to persist in the face of adversity that will encourage them to view hardships as temporary (stability). In addition, feedback from T1 (pre intervention) survey was taken into consideration for the workshop design. Specifically, many students communicated a desire to develop academic strategies, learn to manage stress and setbacks, and increase motivation and confidence, which aligned with the PsyCap design. Other areas noted for skill development are discussed in more detail in the results.

PsyCap Intervention Fidelity

Successful implementation and analysis of intervention research requires maintaining and evaluating intervention fidelity (Borrelli et al., 2005; Carroll et al., 2007; Ellefson & Oppenheimer, 2022; Rew et al., 2018). Five components have been identified by the National Institute of Health's Behavior Change Consortium as contributors to intervention fidelity: (a) study design, (b) provider or facilitator training, (c) treatment or intervention delivery, (d) treatment or intervention receipt, and (e) enactment of treatment or intervention skills (Bellg et al., 2004).

Fidelity checks for study design involve ensuring the design includes a clear theoretical framework. This criterion was met by following Luthans, Avey, et al.'s (2006)

model that is guided by positive psychology frameworks. The intervention also incorporated elements from FG student interventions that have been shown to contribute to their academic achievement and persistence, as well as theories rooted in educational psychology (e.g., Bandura, 1997, 2001; Dryden et al., 2021; King et al., 2017; Stephens et al., 2014; Weiner, 1985; 2010).

Fidelity checks for training involves ensuring facilitators have an appropriate level of training. This criterion was met given that the lead facilitator had extensive and relevant work experiences, including working in higher education for over 18 years with a focus on promoting student success, and previously led workshops and taught courses related to the intervention topics. The facilitator also met with the research assistant/observer and FG upperclassmen who helped facilitate the workshop to share information about the intervention design, preparing for their role, and participant confidentiality.

Fidelity checks for treatment delivery involve checking for adherence to the protocol. There are several approaches to ensuring the fidelity of intervention delivery, including using a script and completing audiotapes of the intervention (Rew et al., 2018). Given the nature of experiences that may be shared by both the upperclassmen and the workshop participants and that the goal was to provide a safe space to learn from one another, audio recording was not included. Rather, an observer form was used to verify adherence to protocol including, timing and order of activities (see Appendix D). The lead facilitator also developed presentation slides with notes (see Appendix E) to ensure consistency between workshops. Observer notes indicated that the facilitator adhered to a

similar duration for activities across the three workshops, kept participants on topic, adhered to the workshop outline, provided adequate instruction, and provided a summary.

Fidelity checks related to treatment and intervention receipts include assessing the extent to which the intervention was completed and followed by participants. Observer notes indicated high engagement on all activities (SMART goals, setbacks and successes, and student panel) across the three workshops, except for the SMART goals activity during the first workshop (observer noted a moderate level of engagement). The observer noted participants during the third workshop asked more questions during the panel than the participants in the first two workshops; however, participants during all three workshops remained engaged.

The final fidelity check is participants' enactment of intervention skills (Bellg et al., 2004). This was observed during the workshop and assessed through the PsyCap workshop questions included in the T2 (post) and T3 (retention) surveys. Observer notes indicated that participants demonstrated the ability to set SMART goals, acknowledge successes, and reframe setbacks asking for clarification and guidance when needed across all three workshops. Survey responses indicated participants used the skills introduced in the workshop, found the activities and discussions had a positive impact on their academic experience, and helped them handle academic challenges they faced. In educational settings, this final fidelity check is linked to the benefit of the intervention and can be assessed by determining if there are statistically significant differences between the treatment and control (Ellefson & Oppenheimer, 2022; Rew et al., 2018). These results are reported in the following chapter

Table 3.1

Demographic Characteristics of Total Sample T1 (pre)

Characteristic	Full Sample		FG		CG	
	n	%	*n*	%	*n*	%
Gender						
Woman	458	75.5	127	76.0	331	75.2
Man	137	22.6	35	21.0	102	23.2
Non-binary	8	1.3	4	2.4	4	0.9
Prefer not to answer/no response	4	0.6	1	0.6	3	0.7
Race/Ethnicity						
Black/African American	123	20.3	34	20.4	89	20.2
White	375	61.8	81	48.5	294	66.8
Asian	61	10.0	30	18.0	31	7.0
Hispanic/Latinx	22	3.6	10	6.0	12	2.7
American Indian/Alaskan Native	5	0.8	2	1.2	3	0.7
Multiethnic	18	3.0	10	6.0	8	1.8
Other	3	0.6	--	--	3	0.6
Classification						
Freshman	270	44.5	85	50.9	185	42.0
Sophomore	84	13.8	22	13.2	62	14.1
Junior	96	15.8	23	13.8	73	16.6
Senior	157	25.9	37	22.2	120	27.3
Parental Education						
Less than High School Diploma	29	4.8	29	17.4	--	--
High school Diploma	138	22.7	138	82.6	--	--
Some College	185	30.5	--	--	185	42.0
Bachelor's Degree	158	26.0	--	--	158	35.9
Master's Degree	72	11.9	--	--	72	16.4
Doctoral or Professional Degree	25	4.1	--	--	25	5.7
Age						
Mean	20.93	--	21.02	--	20.90	--
SD	5.31	--	5.79	--	5.13	--
Work Status						
Currently working	338	55.7	93	55.7	245	55.7
Not currently working	253	41.7	68	40.7	185	42.0
Hours Worked Per Week						
Mean	25.90	--	26.38	--	25.71	--
SD	11.80	--	11.88	--	11.79	--
SES						
Low ($0-$40,000)	205	33.9	83	50.3	122	27.7
Middle ($50,000-$150,000)	277	45.8	60	36.4	217	49.3
Upper ($150,000 or more)	52	8.6	3	1.8	49	11.1

Note. $N = 607$ ($n = 167$ FG, 440 CG).

Table 3.2

Demographic Characteristics of Participants T3 (retention)

Characteristic	Full Sample		Treatment		Control	
	n	%	*n*	%	*n*	%
Gender						
Woman	22	78.6	13	76.5	9	81.8
Man	4	14.3	3	17.6	1	9.1
Non-binary	2	7.1	1	5.9	1	9.1
Race/Ethnicity						
Black/African American	6	21.4	3	17.6	3	27.3
White	15	53.6	8	47.1	7	63.6
Asian	2	7.1	1	5.9	1	9.1
Hispanic/Latinx	2	7.1	2	11.8	--	--
Multiethnic	3	10.7	3	17.6	--	--
Classification						
Freshman	21	75.0	13	76.5	8	72.7
Sophomore	1	3.6	1	5.9	--	--
Junior	6	21.4	3	17.6	3	27.3
Age						
Mean	19.22	--	18.50	--	20.27	--
SD	3.88	--	.89	--	5.98	--

Note. $N = 28$ ($n = 17$ Treatment, 11 Control)

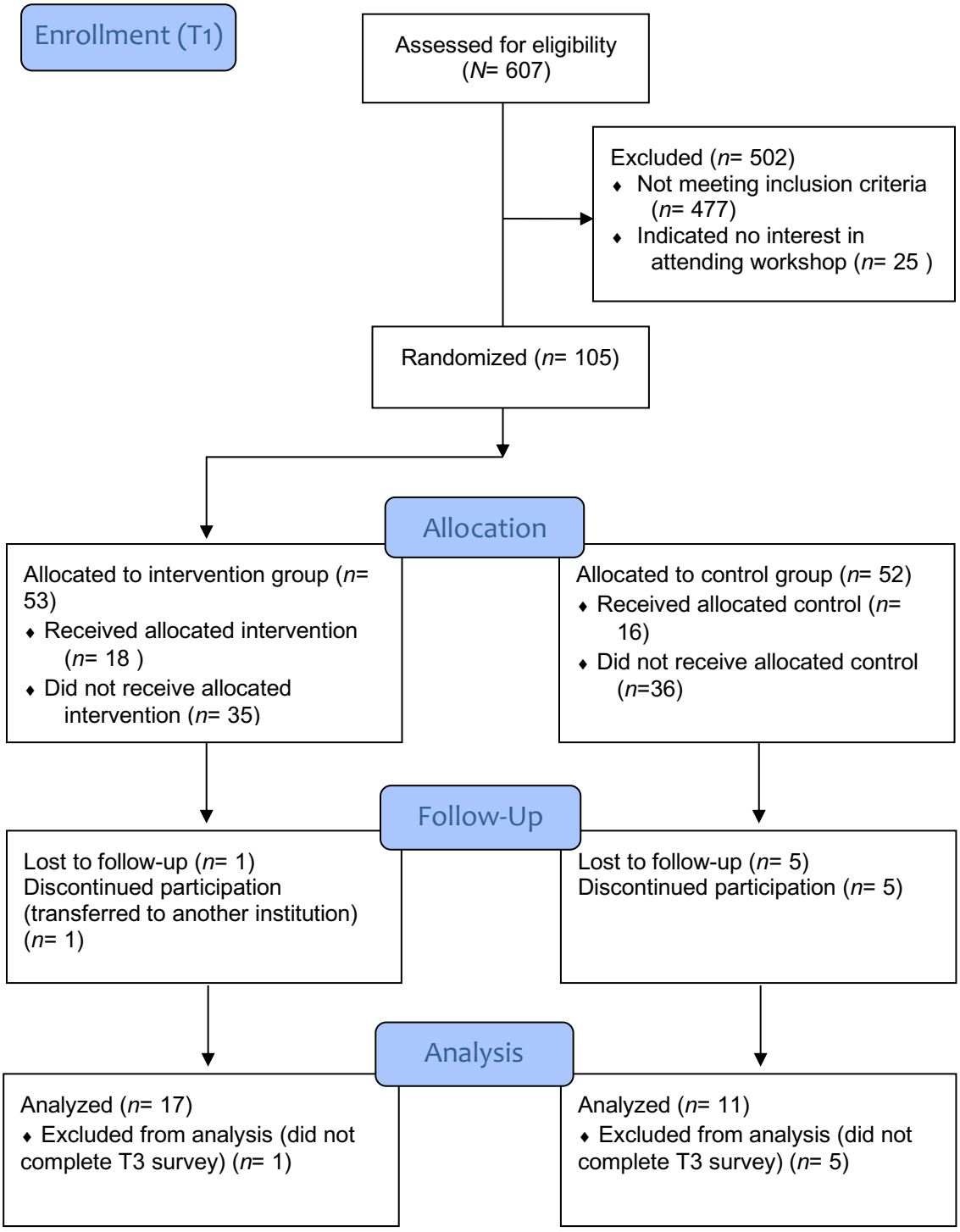

Figure 3.1
CONSORT Flowchart of Participants for Treatment and Control Groups

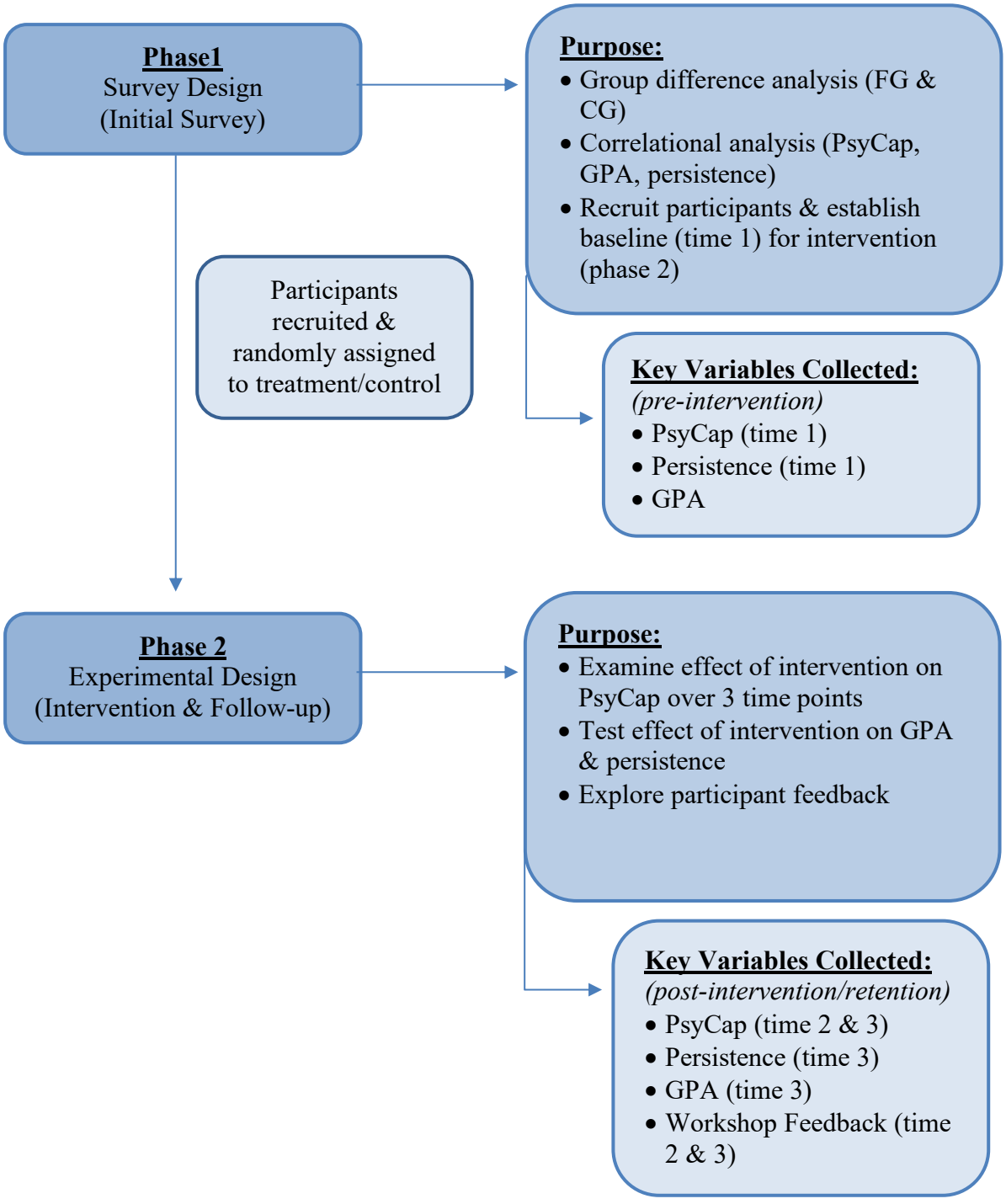

Figure 3.2
Research Design Model

Table 3.3

Psychometric Properties for Psychological Capital Scales and Subscales T1 (pre)

Scale	M	*SD*	Range	Cronbach's α
PCQ-24 (Overall)	4.26	(.69)	1-6	.90
PCQ-24 Hope	4.52	(.78)	1-6	.79
PCQ-24 Efficacy	4.20	(.90)	1-6	.78
PCQ-24 Resilience	4.32	(.74)	1-6	.63
PCQ-24 Optimism	3.99	(.89)	1-6	.76
PCQ-24-A (Academic)	4.37	(.66)	1-6	.90
PCQ-24-A Hope	4.60	(.76)	1-6	.79
PCQ-24-A Efficacy	4.46	(.82)	1-6	.78
PCQ-24-A Resilience	4.33	(.72)	1-6	.63
PCQ-24-A Optimism	4.07	(.81)	1-6	.72

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CHAPTER 4

RESULTS

4.1 MISSING DATA & DATA CLEANING

Quantitative analyses were conducted using the Statistical Package for the Social Sciences (SPSS), Version 27. Data were examined for missing responses, outliers, and normality. Assumptions were met for statistical analyses.[2] Missing data was minimized by requiring responses to survey items corresponding to the primary research questions. Some demographic items were optional, therefore, there was some missing data for T1 (n = 144 for GPA). Data cleaning was performed prior to analyses. Duplicate responses and those who did not meet study criteria (e.g., graduate students) were removed. Any obvious spurious responses (i.e., straight-lining) were also removed. In terms of drop-out for the intervention, 34 participants completed T2 (treatment n = 18, control n = 16) and 28 completed T3 (treatment n = 17, control n = 11). The 6 intervention participants who did not complete the survey for T3 and were excluded from repeated measures analysis.

4.2 PRIMARY ANALYSES

RQ1: Are there differences in PsyCap among first-generation (FG) and continuing generation (CG) students?

Descriptive statistics by generational status are displayed in Table 4.1.

[2] For RQ1, Levene's test of homogeneity of variance was met ($p > .05$); Kolmogorov-Smirnov test indicated normality fell within acceptable range. For RQ2 scatterplot indicated linear relationship. For RQ3 Box's Test indicated equal covariances and Mauchly's Test of Sphericity was met.

Descriptive statistics revealed across the sample (both FG and CG students), the mean score for overall PsyCap was $M = 4.26$ ($SD = .69$) and academic PsyCap was $M = 4.37$ ($SD = .66$). These scores most closely correspond to "somewhat agree" on a 1-6 scale, indicating there was room for growth in PsyCap. The HERO resource with the lowest level was optimism (overall PsyCap optimism $M = 3.99$, $SD = .89$, academic PsyCap optimism $M = 4.07$, $SD = .81$). Descriptive statistics also indicated lower overall PsyCap mean scores for FG students; however, an independent samples t-test demonstrated there was no statistically significant difference between FG and CG students, $t\ (605) = -.797$, $p > .05$, $d = -0.07$. An independent samples t-test also revealed no statistically significant differences in academic PsyCap, $t\ (605) = .268$, $p > .05$, $d = 0.02$.[3]

RQ2: What is the relationship between PsyCap, GPA, and persistence?

Hypothesis: PsyCap, GPA, and persistence are expected to be positively related.

Bivariate Pearson correlations were conducted between PsyCap, GPA, and persistence. Results revealed that overall PsyCap was positively correlated with persistence, $r\ (607) = .213$, $p < .01$ but was not significantly related to GPA, $r\ (463) = .010$, $p > .05$. Academic PsyCap was positively correlated with persistence $r\ (607) = .237$, $p < .01$ and GPA, $r\ (463) = .124$, $p < .01$. Individual HERO resources demonstrated a similar pattern and correlations are displayed in Tables 4.2 and 4.3. Of the HERO resources, hope was most strongly related to persistence (overall PsyCap hope $r\ (607) = .216$, $p < .01$, academic PsyCap hope $r\ (607) = .272$, $p < .01$) and GPA (academic PsyCap hope $r\ (607) = .154$, $p < .01$). The hypothesis for RQ2 was partially supported.

[3] Analysis of covariances (ANCOVAS) were also conducted to control for SES, year of study, and gender as covariates. Results were not statistically significant. Results did not differ when using alternate (broader) FG status definition (i.e., including those whose parents completed some post-secondary courses).

RQ3a: What is the effect of the PsyCap Intervention (PCI) on Academic PsyCap among FG students?

Hypothesis: FG students will demonstrate an increase in Academic PsyCap as a result of the PCI and increases from PCI will be sustained from Time 1 to Time 3.

Academic PsyCap was used in remaining analyses rather than overall PsyCap given that the PCI was designed to target academic PsyCap, and positive relationships were observed between academic PsyCap, persistence, and GPA. Prior to testing the effectiveness of the training, a one-way ANOVA was conducted to test for group differences in academic PsyCap at T1 (pre intervention). Results indicated no significant differences between treatment and control.

Descriptive statistics for the treatment and control groups across time points and variables of interest are included in Table 4.4. Descriptive statistics showed decreases in means for treatment and control groups at T2 but suggested a rebound effect for treatment group at T3: mean scores for this group surpassed T1 for academic PsyCap and all resources except optimism. To test for the effect of the intervention on academic PsyCap, a 2x3 mixed factorial ANOVA was conducted with condition (treatment vs control) as the between-subjects factor and time as the within-subjects factor (pre, post, and retention) for academic PsyCap. Results revealed no significant effects of condition, $F(1, 26) = .538$, $p > .05$, time, $F(2, 52) = 1.82$, $p > .05$, or interaction effect $F(2, 52) = 1.68$, $p > .05$[4]. Marginal means across times points are displayed in Figure 4.1. The hypothesis for RQ3a was not supported.

[4] A 2X2 ANCOVA was also conducted with T1 (pre intervention) scores as covariates. Results were not statistically significant.

RQ3b: What is the effect of the PCI on GPA among FG students?

Hypothesis: FG students will demonstrate higher GPA as a result of the PCI.

Given that most participants were freshmen and did not have a true T1 GPA (GPA may have included dual enrollment courses taken while in high school), T1 GPA was not used in analysis. Descriptive statistics showed that treatment group participants had higher average semester GPA (M = 3.23, SD = .91) and cumulative GPA (M = 3.36, SD = .70) than control participants (M = 3.14, SD = 1.04; M = 3.34, SD = .65) at T3. However, results of independent samples t-tests indicated there were no statistically significant differences between treatment and control participants on either semester GPA, t (26) = .222, $p > .05$, or cumulative GPA, t (25) = .058, $p > .05$. The hypothesis for RQ3b was not supported.

RQ3c: What is the effect of the PCI on persistence among FG students?

Hypothesis: FG students will demonstrate an increase in persistence as a result of the PCI.

To test for the effect of the PCI on persistence, a 2x2 mixed factorial ANOVA was conducted with condition (treatment vs control) as the between-subjects factor and time as the within-subjects factor (T1 and T3). Descriptive statistics showed persistence score means decreased over time for both the treatment group (T1 M = 17.71, SD = 2.14, T3 M = 17.12, SD = 2.94) and control group participants (T1 M = 18.36, SD = 2.94, T3 M = 17.73, SD = 2.28). Results of the analysis revealed there was no statistically significant main effects of condition $F(1, 26) = .618$, $p > .05$, time $F(1, 26) = 1.12$, $p > .05$, nor the interaction effect $F(1, 26) = .002$, $p > .05$[5]. The hypothesis for RQ3c was not supported.

[5] Analysis of covariance (ANCOVA) was also used to examine T1 (pre) scores as covariates. Results were not statistically significant.

4.3 SUPPLEMENTAL ANALYSES

In addition to the main research questions, additional analyses were conducted to examine participant perceptions toward the intervention workshop, use of academic resources, academic challenges, and needs, and advice for other FG students, collected via Likert and open-ended questions.

Workshop (PCI) Feedback

At T2 (post), workshop participants (n = 18) were asked to rate workshop engagement, timing, and usefulness. Participants largely indicated the workshop was "very engaging" (78%), "very useful" (67%), and found the time frame (2 hours) to be "very reasonable" (56%). Regarding the usefulness of PCI activities, 50% selected "all of the above" (goal setting, academic setbacks and success, student panel). Two participants mentioned items in the "Other" option: "being able to not feel like I was not being judged" and "Interacting with other students to find resources for me was really nice.". Over half (56%) of participants indicated they were "very likely" to use the skills and activities introduced in the workshop.

In response to the open-ended item *"Which aspects of the workshop do you plan on using during your time in college?"*, the majority of participants (72%) noted goal setting while some others also mentioned dealing with setbacks and finding ways to destress. One student wrote, "I found the idea of SMART goals so helpful, especially with the fact that I am preparing for graduation and starting grad school. This can be a very stressful time in life and having SMART goals will help so much with my stress levels and the expectations that I will set for myself." Another noted, "Definitely goal setting and looking back at setbacks and that I will be able to come back from them and not get too hung up on them." Participants also had an opportunity to provide any

additional feedback. Overall comments were positive with students writing, “I loved this and would love to be a part of any in the future”, “Going to the workshop helped me a lot”, “This was a great experience. Thanks for the opportunity.” A few made suggestions for change, “I think adding more questions to the student panel would be helpful” and “Maybe just make the time management a little better so the students could ask the other students more questions.”

At T3 (retention), participants had an opportunity to reflect on the PCI and consider any impact it had on their academic experience over the course of the semester, whether it helped them handle academic challenges faced, and if it gave them more academic confidence. Most participants (71%) either “strongly agreed” or “agreed” that the workshop activities and discussions had a positive impact on their academic experience. Over half of the participants (59%) either “strongly agreed” or “agreed” that the workshop activities and discussions helped them handle academic challenges they faced over the course of the semester. Similarly, participants (59%) either “strongly agreed” or “agreed” that the workshop gave them more confidence in their academic potential.

In response to the open-ended item “*Describe what way (if any) you applied the activities/discussions from the success workshop this semester”*, several participants (67%) noted goal setting as an active practice. One student wrote, “During the workshop I attended this semester I learned that sometimes we need to set small goals for ourselves to overcome instead of just focusing on the big ones. Taking this into consideration I wrote down some goals of mine that I could accomplish within the semester. This helped me feel less overwhelmed and proud of myself.” Others mentioned, “I used the goal

setting to really try hard and finish my math class with a B" and "Looking at my goals often helped me see the reason I do what I do and why to not give up." Relating to others was also noted as one participant wrote, "Personally, it was very encouraging to see that other people also face or have faced the same hardships that I face. As a first-generation college student, I feel like my mom does not really understand what I am going through and through the student panel I realized that other students feel the same way." Participants had an opportunity to provide any additional feedback, and two treatment group participants noted the impact of the workshop on their semester. One student noted, "The success workshop helped me out a lot. Writing down my goals and sharing them with other people helped me overcome the stress I was feeling about them. Hearing everyone else's goals and trouble made me realize i'm not the only one that is struggling and helped me feel better about not being alone in my situation." Another wrote, "I loved being able to participate! I feel like without this workshop I wouldn't have pushed myself to get the grade I wanted."

Academic Resources

Frequencies for reported and planned use of university resources were compared among FG and CG participants for T1; results are highlighted in Table 4.5. Generally, students indicated using traditional support services such as academic advising and tutoring though CG students reported higher use than FG students who responded. FG students also indicated making less use of faculty mentoring and career coaching than their CG peers. A majority of respondents indicated they planned to use academic advising, tutoring, peer mentoring, and faculty mentoring. It is worth noting that students

reported counseling or therapy in the "Other" option as a resource used and planned to use.

At T2, participants were asked once again to respond to resources they used and planned to use and at T3 (retention), participants were asked what university resources they used over the course of the semester. Frequencies indicated that treatment group participants widely used resources available to them with the exception of Opportunity Scholars and Career Coaching. Treatment group participants also illustrated an increase in the use of resources across time points while control group participants appeared to engage less with academic resources and demonstrated a decrease over time. Results of resources used by participants across time points can be found in Table 4.6.

Participants were also asked *"What programs or resources do you wish your college offered to help improve first-generation students' experience?"* Treatment group participants (n = 11) noted scholarships and financial support, more opportunities to connect, and more academic resources. One participant suggested, "Almost like a buddy system where someone who has experienced college can help you structure your experience better." Control group participants (n = 6) indicated they thought the university was doing a good job overall with just a few students mentioning additional academic support and chances to connect with other FG students. A student wrote, "I wish that there were programs that included advice and preparation for college before beginning your first semester. This program would be similar to PREP (summer orientation), but just for first-generation college students."

Finally, participants were asked *"If you were giving one piece of advice to another first-generation student, what would it be?".* Treatment group participant (n =

14) comments centered around encouragement not to give up, that it is okay to fail, and to ask for help. Control group participants (n = 8) noted the difference between high school and college, making sure to take care of self, and not to compare themselves to others. Open-ended responses are illustrated in Table 4.7.

Table 4.1

Variable Means and Standard Deviations by Generational Status T1 (pre)

Variable Measured	*Total* *M (Std. Dev.)*	*FG* *M (Std. Dev.)*	*CG* *M (Std. Dev.)*
Overall PsyCap	4.26 (.69)	4.22 (.70)	4.27 (.69)
PsyCap Hope	4.52 (.78)	4.51 (.81)	4.53 (.77)
PsyCap Efficacy	4.20 (.89)	4.14 (.93)	4.22 (.88)
PsyCap Resilience	4.32 (.74)	4.29 (.80)	4.33 (.72)
PsyCap Optimism	3.99 (.89)	3.95 (.88)	4.01 (.89)
Academic PsyCap	4.37 (.66)	4.38 (.67)	4.36 (.66)
Academic PsyCap Hope	4.60 (.76)	4.60 (.79)	4.60 (.75)
Academic PsyCap Efficacy	4.46 (.82)	4.46 (.86)	4.46 (.80)
Academic PsyCap Resilience	4.33 (.72)	4.33 (.72)	4.33 (.72)
Academic PsyCap Optimism	4.07 (.81)	4.12 (.80)	4.05 (.81)

Note. Overall PsyCap and Academic PsyCap scores could range from 1 to 6 with higher scores indicating higher PsyCap. The same range applied to individual HERO resources.

Table 4.2

Correlations between Overall PsyCap, HERO Resources, GPA, and Persistence T1 (pre)

Variable	*n*	*M*	*SD*	1	2	3	4	5	6	7
1. Overall PsyCap	607	4.26	.69	—						
2. Overall Hope	607	4.52	.78	.872**						
3. Overall Efficacy	607	4.20	.89	.854**	.693**	—				
4. Overall Resilience	607	4.32	.74	.780**	.601**	.545**	—			
5. Overall Optimism	607	3.99	.89	.823**	.625**	.578**	.506**	—		
6. GPA	463	3.35	.49	.010	.034	−.012	−.034	.043	—	
7.Persistence	607	17.35	2.87	.213**	.216**	.207**	.130**	.152**	.156**	—

Note. $^{**}p < .01$. After correcting for multiple hypothesis testing using the Holm-Bonferroni procedure to control the familywise error rate for primary hypothesis, no changes were found in statistically significant correlations.

Table 4.3

Correlations between Academic PsyCap, HERO Resources, GPA, and Persistence T1 (pre)

Variable	*n*	*M*	*SD*	1	2	3	4	5	6	7
1. Academic PsyCap	607	4.37	.66	—						
2. Academic Hope	607	4.52	.78	.885*	—					
3. Academic Efficacy	607	4.20	.89	.868*	.725*	—				
4. Academic Resilience	607	4.32	.74	.811*	.648*	.581*	—			
5. Academic Optimism	607	3.99	.89	.841*	.648*	.630*	.569*	—		
6. GPA	463	3.35	.49	.124**	.154**	.108*	.034	.119*	—	
7. Persistence	607	17.35	2.87	.237*	.272*	.200*	.153*	.184*	.156*	–

Note. $^{*}p < .05$. $^{**}p < .01$. After correcting for multiple hypothesis testing using the Holm-Bonferroni procedure to control the familywise error rate for primary hypothesis, no changes were found in statistically significant correlations.

Table 4.4

Descriptive Statistics of Treatment and Control Groups Across Time Points

Variable	T1 Pre-intervention		T2 Post intervention		T3-Retention	
	T	C	T	C	T	C
Academic PsyCap	4.17 (.59)	4.48 (.76)	4.04 (.79)	4.29 (.85)	4.37 (.53)	4.32 (.61)
Hope	4.51 (.77)	4.89 (.77)	4.31 (1.01)	4.58 (.97)	4.72 (.74)	4.80 (.66)
Efficacy	4.36 (1.02)	4.50 (1.13)	4.30 (.95)	4.38 (.98)	4.67 (.76)	4.20 (.80)
Resilience	3.98 (.77)	4.27 (.77)	3.91 (.86)	4.21 (.92)	4.31 (.66)	4.33 (.78)
Optimism	3.81 (.64)	4.26 (.78)	3.62 (.81)	3.98 (1.03)	3.77 (.57)	3.95 (.88)
GPA	3.64 (.36)	3.28 (.70)	---	---	3.23 (.91)	3.14 (1.04)
Persistence	17.71 (2.14)	18.36 (2.94)	---	---	17.12 (2.85)	17.73 (2.28)

Note. T = treatment group; C = control group. N = 28, *n* = 17 treatment group participants, *n* = 11 control group participants. GPA at T1 treatment group *n* = 13. GPA, control group *n* = 7. GPA at T3 represents the semester GPA for all participants.

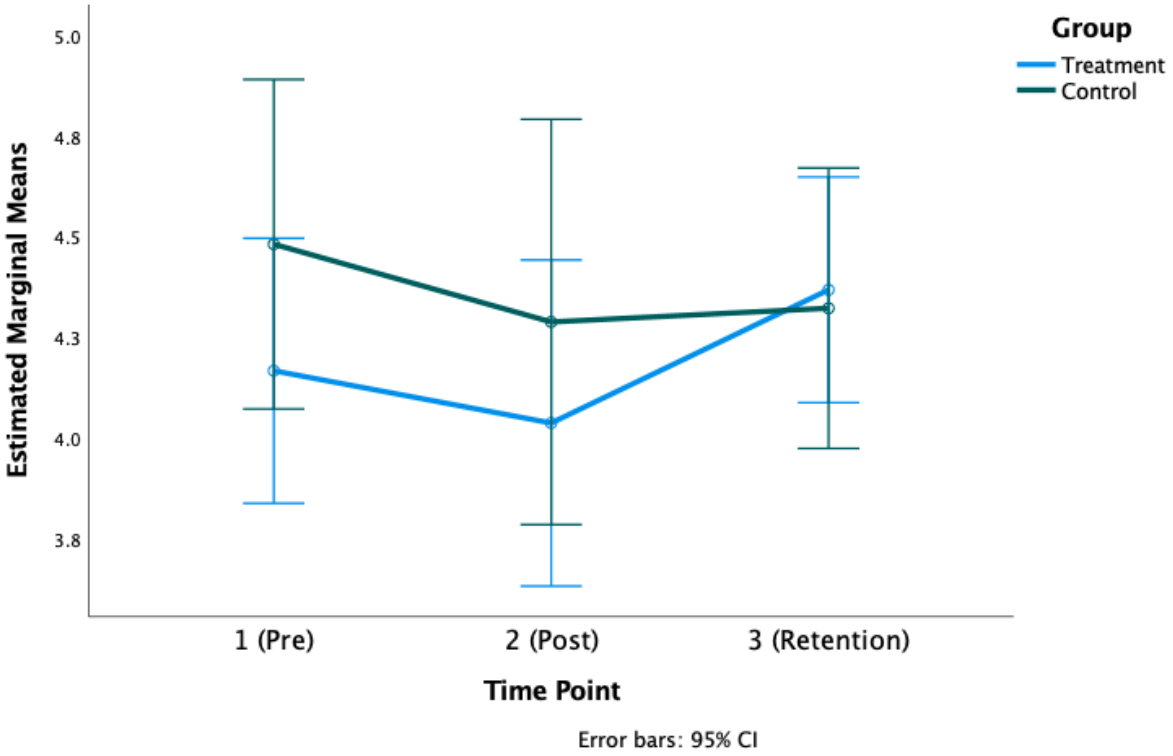

Figure 4.1
Estimated Marginal Means of Academic PsyCap for Treatment and Control Groups

Table 4.5

University Resources by Generational Status T1 (pre)

Variable	Total		FG		CG	
	n	%	*n*	%	*n*	%
Services Plan to Use						
TRIO	55	9.1	22	13.2	33	7.5
Opportunity Scholars	88	14.5	31	18.6	57	13.0
Tutoring	329	54.2	91	54.5	238	54.1
Supplemental Instruction	146	24.1	37	22.2	109	24.8
Peer Mentoring	175	28.8	41	24.6	134	30.5
Faculty Mentoring	147	24.2	31	18.6	116	26.4
Academic Advising	324	53.4	84	50.3	240	54.5
Career Coaching	133	21.9	46	27.5	87	19.8
Other	13	2.1	3	1.8	10	2.3
Serviced Used						
TRIO	44	7.2	18	10.8	26	5.9
Opportunity Scholars	31	5.1	6	3.6	25	5.7
Tutoring	165	27.2	30	18.0	135	30.7
Supplemental Instruction	84	13.8	18	10.8	66	15.0
Peer Mentoring	94	15.5	18	10.8	76	17.3
Faculty Mentoring	63	10.4	12	7.2	51	11.6
Academic Advising	312	51.4	92	55.1	220	50.0
Career Coaching	25	4.1	6	3.6	19	4.3
Other	22	3.6	3	1.8	19	4.3

Note. FG= first-generation, CG = continuing generation.

Table 4.6

University Resources Used by Group Status Across Time Points

Variable	T1-Pre (*N* = 34)		T2-Post (*N* = 34)		T3-Retention (*N* = 28)	
	T (*n* = 18)	C (*n* = 16)	T (*n* = 18)	C (*n* = 16)	T (*n* = 17)	C (*n* = 11)
TRIO	5	2	6	2	4	3
Opportunity Scholars	--	1	2	1	--	1
Tutoring	1	2	6	4	5	1
Supplemental Instruction	2	2	6	1	7	2
Peer Mentoring	3	3	7	4	4	3
Faculty Mentoring	2	1	4	1	4	2
Academic Advising	10	10	10	9	9	9
Career Coaching	0	1	1	1	0	2
Other	1	--	2	--	4	1

Note. T = treatment group; C = control group.

Table 4.7

Open-ended Responses FG Student Experience T3 (retention)

Question	Example Participant Responses
What academic challenges (if any) did you face this semester?	"Time management between study and work."
	"For a while, I struggled to find a balance between school and personal life. I knew that I did not need to ignore myself and my needs but I always ended up choosing to study instead of taking care of my mental health."'
	"I failed one of my classes and had to drop two of my other classes as well."
	"Not knowing how to study for my classes, not being prepared for how hard college was"
	"Going into this semester I thought it would be like high school. When I first started going to biology class I didn't study as much as I needed to, so I started failing and when I started studying it was too late. I ended up having to drop the class and I am retaking this semester."
	"My grades are not where I would like them to be. I feel as though I need to learn better study techniques."
	"I did not face many academic challenges this semester, the main challenge I faced was not having enough confidence in my academic abilities. Overall, this semester was great, but that is something I have always struggled with."
What programs or resources do you wish your college offered to help improve first-generation students' experience?	"More financial support"
	"I feel like we need to be taught about certain things more. I didn't learn about the TRIO program until my third semester in college and I feel very unprepared when thinking about graduate school etc."
	"I would say just more opportunities to connect with each other. We should stand by each other's sides so that no one feels like they are alone."
	"I wish they offered more spaces for students to study."

	"Almost like a buddy system where someone who has experienced college can help you structure your experience better."
	"TRIO is a first generation organization that helps college students with pretty much anything they need, but only 150 students get accepted into it. I did not get accepted, but I wish I did. So to answer the question I wish TRIO accepted more people or all first gen students that want to be a part of this organization."
	"…If this is not already offered, I would love to have a group based on offering study techniques for first generation students."
	"I wish that there were programs that included advice and preparation for college before beginning your first semester. This program would be similar to PREP, but just for first-generation college students."
If you were giving one piece of advice to another first-generation student, what would it be?	"Don't put off until tomorrow what you can do today."
	"I know that it can be difficult or scary if your parents don't have the answers to college questions and can't help you along the way, but there are so many people that are willing and excited to help you! I remember how stressful it was when my mom couldn't help me with paperwork or other things in the beginning because she had never had to deal with college things before, but so many people helped me along the way."
	"Don't give up and get discouraged use all of your resources."
	"Ask for study tips from students that have already taken courses that you're taking."
	"Don't give up, you got this. It will get hard at times but you can push through."
	"Don't overload yourself, it's easy to add a bunch of hours onto your schedule, but you have 4 years to finish college and most people take longer than that. Having too many classes puts too much stress on a person. Time management is also a very important skill to be great at in college, if you don't have good time management your gonna struggle."
	"Don't compare your journey to others"

CHAPTER 5

DISCUSSION

The primary goal of this research was to examine the implementation of a short psychological capital (PsyCap) intervention among first-generation (FG) students to determine whether the intervention showed a significant and positive increase in PsyCap and whether increases were sustained over time. Secondary aims included exploring differences in PsyCap between FG and continuing generation (CG) students and investigating relationships between PsyCap and academic achievement and persistence. Supplemental analyses were also included to examine participant perceptions toward the intervention and gain additional insight into FG students' academic experience.

This study makes unique contributions to the literature as it is one of the first to examine PsyCap and the impact of a PsyCap intervention designed to promote academic success and persistence among FG students. This study also responded to calls for more PsyCap intervention research in academia and includes longitudinal data (e.g., Avey et al., 2010; Barratt & Duran, 2021; Dello Russo & Stoykova, 2015; Hazan Liran & Miller, 2019; Luthans et al., 2010; Newman et al., 2014). Prior to this study, limited attention had been given to making direct connections between PsyCap and theories widely used in educational psychology. Social cognitive theory and attribution theory were used as frameworks to provide support for PCI activities and the application of PsyCap to an academic context; applying these theories provided a novel approach to build on previous work.

Additionally, this study provides a level of transparency in the PCI design, implementation, and fidelity that was not readily available in previous PsyCap research. Key findings and implications are discussed more in detail below.

5.1 PsyCap by Generational Status

Results illustrated moderate levels of overall PsyCap (PsyCap for everyday life) and academic PsyCap (PsyCap specific to academics), as well as the subsequent HERO resources (hope, efficacy, resilience, optimism) for both groups, suggesting some room for development. Exploratory analysis revealed there were no statistically significance differences in PsyCap and HERO resources between FG and CG students, even after controlling for socioeconomic status (SES), year of study, and prior academic achievement (GPA). These results may be interpreted as a hopeful finding for FG students. Research often paints a picture of FG students' deficits highlighting what is lacking compared to their CG peers (Ives & Castillo-Montoya, 2020; Stebleton & Soria, 2012). A wide body of research indicates FG students are less academically prepared for college, generally receive less support (personal and financial), and demonstrate lower persistence and graduation rates than their CG peers (Cataldi et al., 2018; Redford & Hover, 2017; Toutkoushian et al., 2021; Whitley et al., 2018). Results of this study suggest that despite facing additional challenges, FG students possess similar levels of the positive psychological resources that have been linked to academic success and persistence (e.g., Montas et al., 2020; Rand et al., 2020; Wilcox & Nordstokke, 2019) as their CG peers.

5.2 Relationship Among PsyCap, GPA, and Persistence

Results largely supported the hypothesis that there would be significant positive correlations between PsyCap, GPA, and persistence. Analysis of overall PsyCap indicated there was a significant positive relationship between PsyCap and persistence, but no relationship between PsyCap and GPA. On the other hand, results for academic PsyCap revealed significant positive relationships between academic PsyCap, GPA, and persistence. Additionally, each of the individual academic PsyCap HERO resources (hope, efficacy, optimism, resilience) were positively related to persistence, and all but resilience was positively related to GPA. These findings support previous research demonstrating that academic PsyCap has a positive relationship with GPA and persistence (Koontz, 2016; Luthans et al., 2012). The results suggest PsyCap is context specific and demonstrate that academic PsyCap is more strongly linked to academic outcomes (i.e., GPA and persistence) compared to overall PsyCap. Although the magnitude of the relationships are relatively small, the findings are consistent with previous examinations of PsyCap and GPA, reporting small to moderate correlations (Carmona-Halty et al., 2019; Gomes da Costa et al., 2021; Hazan Liran & Miller, 2019).

5.3 PsyCap Intervention Effects

It was expected that the PCI would lead to an increase in academic PsyCap and positively impact academic achievement (GPA) and persistence (enrollment intentions) among treatment group participants. These hypotheses were not supported. The findings were unexpected given past research demonstrating the positive effects of PCIs in both the organizational and educational settings, although these were not conducted with FG students. Among treatment group participants, descriptive results demonstrated a

decrease in academic PsyCap and the HERO resources between time 1 (pre) and time 2 (post) but showed increases at time 3 (retention) exceeding time 1 means on all variables with the exception of optimism. Control group participants also illustrated decreases from time 1 to time 2, but only resilience at time 3 increased above time 1 levels although changes observed in the two groups were not statistically significant.

Regarding GPA, previous research indicated PsyCap and the individual HERO resources were positive predictors of GPA and linked to academic achievement and success (Hazan Liran & Miller, 2019; Luthans et al., 2019; Martinez, et al., 2019; Sweet et al., 2019). Descriptive statistics indicated the treatment group participants had higher semester GPAs than the control group participants though differences were not statistically significant. Prior to this study, limited research has examined direct links between PCIs and student persistence, but the individual HERO resources were shown to contribute to student perseverance and persistence (Montas et al., 2020; Robbins et al., 2018; Rand et al., 2020; Schunk & DiBenedetto, 2020). Interestingly, mean levels of persistence for both groups decreased from time 1 to time 3 with a slightly greater decrease for control group participants, though changes were not statistically significant. Results suggest treatment group participants may simply have been in the middle of setbacks at time 2 and needed more time to participate in mastery experiences, bounce back from adversity, reframe setbacks, and apply PCI activities in order to illustrate an impact of the PCI generally and for change to reflect in GPA and persistence.

5.4 Student Feedback, Academic Challenges & Needs

Workshop (PCI) Feedback

Despite the lack of impact of the PCI on primary quantitative outcomes, participant feedback provides insight into other facets of the experience that were not fully captured through the PsyCap scales. Workshop participants responded positively to the PCI with the majority reporting that it was very engaging, the timing was reasonable, and they felt it had a positive impact on their academic experience. The majority of participants reported all PCI activities (i.e., goal setting, academic setbacks and successes, and FG student panel) were useful and indicated after the workshop that they were very likely to use the skills and activities presented. In follow-up, many described how they applied the goal setting activity and had started taking advantage of programs offered and faculty office hours. Over half of the participants indicated the workshop activities helped them handle challenges they faced and gave them more confidence in their academic potential. Participants also indicated they enjoyed being able to interact with other FG students and appreciated the opportunity to share their experiences and hear from others. Analysis of workshop fidelity also indicated participants were highly engaged in the activities across workshops. The PCI feedback highlights FG students' interest in opportunities to engage with one another and explore strategies to promote academic success. The discrepancy observed between quantitative results and participant feedback adds further support for the additional time that may be needed to implement PCI strategies and observe a change in academic PsyCap and subsequent HERO resources.

Use of Resources

At all three time points, data was collected regarding students' intentions and use of university support services (e.g., TRIO, Opportunity scholars, tutoring, supplemental instruction, peer/faculty mentoring, academic advising, career coaching). At time 1, CG students reported greater use of the available university resources compared to FG students. This finding is consistent with previous research indicating FG students are less likely to seek assistance, utilize available resources, and engage with faculty than their CG peers, which could be attributed to a variety of factors including, FG students' lack of knowledge about resources available, limited access to social networks that might provide guidance on navigating the college experience, and time constraints due to added financial demands requiring them to work more (Ives & Castillo-Montoya, 2020; Stebleton & Soria, 2014; Stephens et al., 2014). In reviewing the use of resources across time points, treatment group participants engaged more with academic resources than the control group participants. Although these differences may not be a direct product of the PCI, some workshop participants indicated they discovered university resources they were previously unaware of through the workshop. This finding supports previous research indicating FG students may need additional guidance on identifying available resources (Stebleton & Soria, 2014; Stephens et al., 2014).

Academic Challenges, Needs, & Advice

Regarding academic challenges faced over the course of the semester, both the treatment and control group provided similar responses. Students indicated they struggled with procrastination, had difficulty finding a balance between academic and personal demands, and needed to develop better study strategies. These responses mirrored what

both FG and CG students cited at time 1 in response to the skills they wanted to build in order to be more academically successful. Participants had the opportunity to provide feedback on programs they wish were offered to improve the FG student experience. Responses from both the treatment and control groups indicated these students would like more financial support, additional tutoring, designated study spaces, and opportunities to connect with others. Finally, the advice participants had for other FG students largely centered around encouraging them not to give up, letting them know it was okay to fail, promoting the use of resources, and highlighting the value in asking others for help. This advice highlights key elements of the PsyCap resources promoting hope (pathways), efficacy (social persuasion), resilience (bouncing back), optimism (positive outlook moving forward). Overall, these findings suggest the challenges and needs of FG students are not vastly different from their CG peers and attention should be given to intentionally designing opportunities for students to develop skills and resources that promote academic success early in their academic career. Given development of these skills may take time, efforts should be made to assess students' application of learned skills and strategies and supplement when needed.

5.5 Implications

The findings of this study have important educational and theoretical implications. First, the lack of statistically significant differences observed between FG and CG students' stands in contrast to the FG literature indicating FG students enter postsecondary education with multiple deficits when compared to their CG peers. The findings of this study suggest FG students share similar levels of academic PsyCap and the positive psychological resources (i.e., hope, efficacy, resilience, optimism) that have

been linked to favorable academic outcomes. This warrants further exploration to examine why disparity still exists between FG and CG students in terms of academic achievement and persistence if they possess similar levels of these resources. Institutions should consider whether they are missing opportunities to further develop these resources throughout FG students' college career that could lead to increased academic success and graduation rates. This may include examining current approaches to supporting FG students and exploring whether CG students are engaging more with activities and experiences (e.g., faculty mentoring, campus involvement, peer mentoring, academic research, tutoring) that serve to develop these key psychological resources, and if so, why? FG student programming is often relegated to a TRIO Programs Office who serve a smaller subset of the FG student population. Anecdotally, several PCI participants in the treatment group stated they were unaware they were considered FG and had not heard of TRIO Programs. Research suggests a multi-faceted and comprehensive approach is necessary to improve college success for FG students (Perna & Jones, 2013) and the greater number of high impact practices, the greater the benefit for FG students (Finley & McNair, 2013). Institutions should promote more collaborative efforts across campus (i.e., success centers, counseling services, TRIO, first-year programming, faculty/staff working together) to build academic PsyCap ensuring a cohesive and comprehensive approach to supporting both FG and CG students in their first year and beyond.

Second, responses from open-ended data revealed that FG and CG students share similar concerns about academic challenges they may face and skills they want to build in order to be academically successful. Students were concerned about time management, their ability to learn, the possibility of failing, meeting financial demands, dealing with

stress, and transitions to college. Similarly, both FG and CG students noted a desire to develop study skills and academic strategies, learn to manage their time, reduce procrastination, and increase motivation and confidence. Institutions should consider evaluating what opportunities currently exist to assuage their concerns and promote these skills. For example, first-year seminar courses and living learning communities provide avenues to encourage the development of effective academic strategies, promote ways to manage stress and anxiety, and create a sense of belonging. Assessing the information being presented to students and ensuring inclusion of elements grounded in educational psychology can contribute to the development of important self-regulation, motivation, and learning skills that promote academic PsyCap. This could include incorporating activities used in the PCI rooted in social cognitive theory and attribution theory, such as goal setting (controllability), reframing setbacks (psychological and emotional feedback, stability), identifying/sharing successes (locus, vicarious experiences), and hearing from other successful students such as peer leaders/mentors (vicarious experiences). In addition, efforts to focus more directly on self-regulated learning and learning strategies (e.g., time management, metacognitive monitoring, self-reflection), could be useful as past research that has shown a positive impact on academic performance, motivation, and self-efficacy (Broadbent & Poon, 2015; Green, 2017; Richardson et al., 2012; Schunk & DiBenedetto, 2020; Zimmerman & Schunk, 2011) and participant responses suggested a desire to improve study/learning strategies, which the intervention may not have directly addressed. By integrating activities that target self-efficacy beliefs and motivation alongside self-regulated learning, learners can experience a reciprocal process of enhanced confidence, increased intrinsic motivation, and greater perseverance.

Much of the onus for this type of skill-building often falls on first-year seminars, but faculty across disciplines are in an ideal position to facilitate the development of academic PsyCap as well, especially academic efficacy. Faculty have the opportunity to design their courses in a way that includes opportunities for mastery experiences to help develop students' academic self-efficacy (Bandura, 1997; Schunk & DiBenedetto, 2020), such as reducing high stakes testing and providing incremental opportunities to demonstrate skills. Research suggests additional best practices include active learning, collaborative group work, teaching metacognitive strategies, promoting classroom engagement, providing meaningful feedback on homework and exams (Duchatelet & Donche, 2019; Hempel et al., 2020; Theobald, 2021). Outside of the classroom, faculty should consider additional ways to promote engagement with students including, Zoom drop-ins, office hours, mentoring, or group review sessions (Hempel et al., 2020).

Finally, the lack of impact observed as a result of the PCI stands in contrast to the PsyCap intervention literature citing significant increases in PsyCap and positive impact on GPA. Although a review of descriptive statistics indicated declines in at time 2, the positive changes observed at time 3, combined with participant feedback, suggests there may be value in the PCI activities, but a micro-intervention may not be sufficient to develop FG students' academic PsyCap. Development of academic PsyCap may require individual focus on each of the HERO resources and promotion of learning strategies and regulation skills that go beyond a 2-hour intervention requiring additional time to implement and assess. For example, one of the PCI activities designed to develop hope had students setting an academic goal. Many students indicated a final grade in a course as the goal which they would not see to completion until the end of the semester, and

several participants cited the goal setting as an active process they took away from the PCI. Future PCI work among FG students should consider spreading the content over the course of several sessions or having booster or refresher sessions after the initial intervention (and likewise, including longer-term retention data). Activities could include opportunities to assess progress towards goals, explore additional pathways to success, complete attribution retraining exercises, and build connections with other students (Chodkiewicz & Boyle, 2014; Dryden et al., 2021; Graham, 2020). For example, some studies have used videos or writing activities to explain and apply the benefits of controllable attributions, observing a positive impact on achievement and academic control beliefs (Dryden et al., 2021; Hall et al., 2007). In line with this, scholars suggest the effectiveness of interventions can be optimized by considering the context beyond the intervention, including opportunities to reinforce the newly developed skills and mindsets, and promoting engagement with supportive social networks (Walton, 2014; Walton & Yeager, 2020; Wentzel & Wigfield, 2007).

Additional consideration should also be given to incorporating PCIs into areas FG students are engaged with to expand the reach of this work. This could include, existing TRIO Programs, summer orientation, and first-year seminars. For example, summer orientation programs could administer the Academic PsyCap Questionnaire and share results with students. Workshops could be facilitated at orientation that carry over into first-year programming and continue in meetings with academic advisors making it a more comprehensive approach to highlighting the strengths students possess and promoting development in areas that have room to grow. This approach would stand in contrast to the deficit approach that has often been applied to supporting FG students,

which frames the challenges FG students face as shortcomings. An asset-based approach promotes an individual's strengths and purposefully considers existing abilities students possess based on their own lived experiences (Hands, 2020; Whitley et al., 2018). Findings in this study mirror previous research indicating FG students have a variety of personal assets including, optimism, goal direction, proactivity, problem-solving, and self-reliance that can be cultivated in order to promote academic achievement and overall well-being (Garrison & Gardner, 2012; Hands, 2020; Minicozzi & Roda, 2020). Institutions should consider avenues in which they can recognize student strengths, build upon them, and promote their use to impact academic success. In addition, future PCI work should continue including activities that are rooted in educational psychology theories and consider additional components based on needs. Feedback from PCI participants provides support for the activities included, especially the goal setting activity and the opportunity to hear from other FG students.

5.6 Limitations and Future Research

There are limitations to this study that are important to note and help to identify areas for future research. First, this study relied on self-report measures which inherently are susceptible to cognitive biases that can cause measurement error (Chan, 2009). Future research should consider gathering multi-source data (e.g., other rater-peers/faculty, behavioral assessments, experience sampling) along with in-depth qualitative channels (e.g., interviews) to help triangulate data and provide additional insight into factors that might be impacting FG students' academic PsyCap and the subsequent HERO resources. Although GPA is a widely used as a measure of academic achievement in educational research, it is possible it does not capture an accurate picture of learning or growth and

additional measures are needed, especially among underserved populations like FG students (York et al., 2015). This may include measuring the acquisition of skills and competencies using scales such as the Non-Cognitive Questionnaire (Ting & Sedlacek, 2000) or the Motivated Strategies for Learning Questionnaire (Pintrich & de Groot, 1990) and assessing attainment of learning outcomes using measures similar to end of course evaluations (York et al., 2015). In this research, persistence was measured using the institutional commitment subscale in the College Student Persistence Questionnaire (Davidson et al., 2009). It is possible, however, that this subscale did not fully capture important nuances that impact FG student persistence such as family support, financial demands, and work status (House et al., 2020; Pascarella et al., 2004; Radunzel, 2021; Stebleton & Soria, 2012; Toutkoushian et al., 2021). Future research should consider using alternative methods to assessing academic achievement and using a more comprehensive persistence measure.

Relatedly, future research may also consider supplementing the measure of PsyCap (PCQ-24) to further explore HERO resources. As an example, in the PsyCap framework, hope is treated as a cognitive experience (Snyder, 2001), yet research suggests this view may diverge from the layperson's conceptualization (Jonah Li et al., 2019) and education research that conceptualizes hope as a largely emotional state (Pekrun, 2006). Future research could consider supplementing with measures that focus more directly on the emotional component. Additionally, the resilience component of the PCQ-24 demonstrated a lower than acceptable level of reliability ($\alpha = .63$) and does not appear to account for a multidimensional approach to resilience (Masten, 2001). Future research should consider including measures that assess resilience across multiple

systems. Similarly, self-efficacy could be measured in a more task-specific manner to align with theory. Finally, including direct measures of students attributions for success and failure such as the Academic Attributional Style Questionnaire (Higgins & MacGregor, 2005) could provide greater insight into changes in students' cognitive processes.

Second, the results in this study are based on a sample taken from a single medium-sized public university in the Southeastern United States. It is unknown if the same results would have been obtained with a different FG sample in a different higher education setting (i.e., community college, large research institution, non-predominantly white institution), or in other regions of the United States. In addition, much of the research on FG students has been examined at 4-year institutions but FG students make up a considerable portion of the population at 2-year institutions (Cataldi, 2018; Ives & Castillo-Montoya, 2020). Future research should expand to include additional FG student samples at various institutions including, community colleges and minority serving institutions.

Third, this research served as an initial exploration of academic PsyCap among FG students and the implementation of a micro-intervention designed to develop academic PsyCap. The significant positive relationship observed between academic PsyCap, GPA, and persistence promotes the continued exploration of its application in academia. The non-significant effects of the PCI should be used as a starting point for additional research as the contrasting results found in this study may be attributed to a number of factors including, sample size, intervention design, duration of the intervention, and timing of intervention and survey completion. Previous PCI studies

employed in the educational setting have included larger treatment group participant sizes (i.e., >100 , Luthans et al., 2012; Luthans et al., 2014), although there have been some PCI studies with smaller sample sizes (i.e., 26-35 treatment group participants) that indicated statistically significant effects (Corbu et al., 2021; Dello Russo & Stoykova, 2015; Song et al., 2019). Although the final sample (n = 28) met the minimum number that a priori analysis recommended to yield medium effect sizes, the number of participants were not equal across groups, and it is probable that a larger sample size would be needed to adequately assess the effectiveness of the PCI design used in this study and its application for FG students. Future research should include a larger sample size to reduce sample bias, susceptibility to outliers, and allow for greater generalizability.

While there is support for the model developed by Luthans et al. (2006) and the relatively short length of the micro-intervention, it is possible that a longer duration is needed to detect change. It is worth noting extending the length may present a challenge as the 2-hour commitment may have impacted the number of FG students able to participate. Numerous attempts were made to recruit participants using incentives (monetary, extra credit) and sending several workshop invitations and survey reminders via email. Despite expressed interest in the workshop at time 1, it is possible the incentives were not valuable enough to encourage FG student participation. FG literature indicates free time is limited as many FG students work while attending college (Cataldi et al., 2018). This was true for the study sample with over half of FG students indicating they were working and on average reported working 26 hours a week. Although treatment group participants indicated the timing of the workshop was reasonable,

offering the PCI in a variety of formats or venues (i.e., online, in first-year seminar courses, at orientation) may provide an opportunity for increased participation and ability to assess the impact. Future research should consider including in preexisting programs and examining alternative PCI formats as there is some evidence to suggest online, and micro-learning PCIs are as effective or more advantageous than face-to-face delivery (Carter & Youssef-Morgan, 2022). Similarly, interventions designed to foster growth mindsets and reframe attributions have found success using online modules, which can be embedded into curriculum or stand-alone (Dryden et al., 2021; Lazowski & Hulleman, 2015; Walton, 2014).

Attempts were made to facilitate the workshop early in the semester to reduce any potential outside influence that might impact students' academic PsyCap (i.e., peer mentoring, tutoring, campus involvement), but difficulties in recruiting participants led to the workshop being offered multiple times with the last workshop being facilitated nearly two months after the semester began, which coincided with midterms. Several participants commented in the workshop that they were in the midst of taking their first exams or midterm exams and did not perform as well as they anticipated. The timing of these events may have influenced their responses on the academic PsyCap inventory and as a result contributed to the decrease in academic PsyCap scores observed at time 2 for both the treatment and control groups. Future research should attempt to facilitate the workshop prior to the semester beginning or at the start of the semester as research suggests psychological interventions are more effective if the intervention is targeted before psychological cycles are established (Walton, 2014). Given ongoing recruitment efforts and opportunities to participate, the timing and completion of surveys also varied

across participants (e.g., pre-intervention surveys were complete within a range of 3-7 weeks before the intervention, post-intervention surveys were complete with 1-3 weeks after the intervention, and retention surveys were complete 4-16 weeks of the intervention). Prior studies examining the use of a PCI among students administered the pretest one week prior to the intervention and the posttest eight weeks after the intervention (Luthans et al., 2014), while others were not explicit about the timing simply stating, "before the training" (time 1) and "immediately after the training" (time 2, Dello Russo & Stoykova, 2015). Some studies indicated follow up measures (retention) varied between two weeks and six months post-intervention (Dello Russo & Stoykova, 2015; Salanova & Ortega-Maldonado, 2019). Future research should consider having treatment group participants complete the initial survey closer to the intervention and complete the intervention together at the same time to reduce any outside influences on their responses (i.e., work/family demands, negative academic experiences) and allow for better assessment of PCI effects.

Finally, this study focused on a variable-centered approach to exploring academic PsyCap, but emerging research highlights a need for considering the unique combinations or configurations of the HERO resources and their impact on behavior using a person-centered approach (Bouckenooghe et al., 2019; Geremais et al., 2022). Creation of PsyCap profiles (.e.g., Dominant low resilience, Low PsyCap, High PsyCap, Dominant low optimism, Low/moderate PsyCap, High/moderate PsyCap, Moderate PsyCap) could allow for analysis of individual components in conjunction with the overall PsyCap score (Bouckenooghe et al., 2019; Dawkins et al., 2013). Future studies should continue to examine PsyCap and the HERO resources among the student population and consider

using a person-centered approach to further explore any individual differences that may exist. This approach could be particularly useful for the development of PsyCap interventions in order to target resources that could use additional attention. Additionally, although SES and race was considered as a covariate in this research, future research should further explore how intersectional identities may uniquely influence the experience of FG students, especially when it involves historically marginalized groups that may face additional barriers or challenges in navigating higher education.

5.7 Conclusion

This study was among the first to explore academic PsyCap among FG students and examine application of a micro-intervention to build upon the HERO resources they possess. The findings from this research contribute to the literature in several distinct ways. First, results of this study provide a hopeful outlook for FG student research. Findings suggest despite additional challenges FG students may face; they possess moderate levels of psychological resources similar to their CG peers. Second, the significant positive relationship found between academic PsyCap, GPA, and persistence contributes to the literature by supporting previous research and examining the connection to persistence. Third, this study adds to existing academic PsyCap literature answering the call for more intervention work and longitudinal data. It provides transparency in both the PCI design and an intervention designed to target FG students allowing for replication of this research. It is also among the first to make direct connections between academic PsyCap and theoretical frameworks widely used in educational psychology. Finally, although no significant changes were observed in academic PsyCap, GPA, nor persistence as a result of the PCI, participant feedback did

indicate that students benefited from the experience and increases in academic PsyCap, and the HERO resource means observed at T3 (retention) warrant further investigation. Given that this is a new area of exploration, the results of this study contribute to the ongoing conversation surrounding first-generation students and highlight the need for continued research exploring ways to develop the HERO within.

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APPENDIX A

SURVEY ITEMS

<u>Student Demographics</u> (Included in T1-pre)

What is your age?

How would you describe your racial or ethnic identity?

( ) Black/African American

( ) White

( ) Asian

( ) Native Hawaiian or Other Pacific Islander

( ) Hispanic/Latinx

( ) American Indian/Alaska Native

( ) Multiethnic/Multiracial (you may specify):

( ) Other - (please specify):

What is your gender?

( ) Man

( ) Woman

( ) Transgender/Trans man

( ) Transgender/Trans woman

( ) Non-binary

( ) Prefer not to answer

( ) Prefer to self-describe (please specify):

What is the highest level of education your parents/guardians have completed?*

( ) Less than high school diploma

( ) High school diploma

( ) Some college

( ) Bachelor's degree

( ) Master's degree

( ) Doctoral or Professional degree

Which of the following best describes the average total combined annual family income (includes income contributed by all adults in the home) that your family earned while you were growing up?

( ) $0-$24,000

( ) $24,000-$40,000

( ) $50,000-$60,000

( ) $60,000-$80,000

( ) $80,000-$100,000

( ) $100,000-$150,000

( ) $150,000-$200,000

( ) $200,000 or more

( ) Prefer not to disclose/Unsure

What was your ACT score? (if applicable)

What was your SAT score? (if applicable)

What was your high school GPA?

What is your cumulative college GPA?

What is your classification?

( ) Freshman

( ) Sophomore

( ) Junior

( ) Senior

( ) Other -(please specify):

What is your Major?

Are you attending college full time or part time?

( ) Full time (taking 12 credit hours or more)

( ) Part time (taking less than 12 credit hours)

Do you receive any type of financial aid or scholarships?

( ) Yes

( ) No

( ) Not applicable

Are you currently working while attending college?

( ) Yes

( ) No

( ) Not applicable

If you are currently working, how many hours do you work a week?

What is the highest degree you plan to earn?

( ) Associate degree

( ) Bachelor's degree

( ) Master's degree

( ) Doctoral or Professional degree

PsyCap Questionnaire* (Included in T1 (pre), T2 (post), T3 (retention) surveys)
*See Permission for Use Document

Persistence (Included in T1 (pre), T3 (retention) surveys)

How likely is it that you will earn a degree from here?

( ) Very unlikely ( ) Somewhat unlikely ( ) Neutral ( ) Somewhat likely ( ) Very likely

How confident are you that this is the right university for you?

( ) Very unconfident ( ) Somewhat unconfident ( ) Neutral ( ) Somewhat confident ( ) Very confident

How likely is it that you will re-enroll here next semester?

( ) Very unlikely ( ) Somewhat unlikely ( ) Neutral ( ) Somewhat likely ( ) Very likely

How much thought have you given to stopping your education here, perhaps transferring to another college, going to work, or leaving for other reasons?

( ) Very little thought ( ) Little thought ( ) Neutral ( ) Some thought ( ) A lot of thought

Academic Resources (Included in T1 (pre), T2 (post), T3 (retention) surveys)

Please indicate which (if any) of the following support services you have USED (check all that apply).

[ ] Tutoring

[ ] TRIO Programs

[ ] Opportunity Scholars

[ ] Supplemental Instruction

[ ] Peer mentoring

[ ] Faculty mentoring

[ ] Academic advising

[ ] Career coaching

[ ] Other -Please indicate any additional services you have used:

Please indicate which (if any) of the following support services you PLAN to use (check all that apply).

[ ] Tutoring

[ ] TRIO Programs

[ ] Opportunity Scholars

[ ] Supplemental Instruction

[ ] Peer mentoring

[ ] Faculty mentoring

[ ] Academic advising

[ ] Career coaching

[ ] Other -Please indicate any additional services you have used:

<u>Open-Ended</u> (T1 (pre) survey)

What concerns (if any) do you have about potential academic challenges you may face this semester?

Are there any skills you would like to build to help you be more academically successful

<u>Open-Ended</u> (T3 (retention) survey)

What academic challenges (if any) did you face this semester?

What programs or resources do you wish your college offered to help improve first-generation students' experience?

If you were giving one piece of advice to another first-generation student, what would it be?

Any other feedback you would like to share?

Workshop Participation (T1 (pre) survey)

Would you be interested in participating in a short 2-hour workshop in September designed to develop your psychological resources and help build strategies and skills for academic success? You will be compensated for your participation.

( ) Yes

( ) No

( ) Maybe

Workshop Evaluation (Included for Workshop Participants T2 (post) survey)

To what extent did you find the workshop engaging?

Not engaging _____Very engaging

To what extent was the workshop useful?

Not at all useful _____Very useful

To what extent did you find the timing of the workshop (2 hours) reasonable?

Not at all reasonable _____Very reasonable

Which activity did you find most useful? Check all that apply

[ ] Goal setting

[ ] Academic setbacks & successes

[ ] Student panel

[ ] All of the above

[ ] None of the above

[ ] Other

Which activity did you find least useful? Check all that apply

[ ] Goal setting

[ ] Academic setbacks & successes

[ ] Student panel

[ ] All of the above

[ ] None of the above

[ ] Other

How likely are you to use the skills and activities introduced in the workshop?

Not likely _____Very likely

Which aspects of the workshop do you plan on using during your time in college?

Any additional feedback or suggestions?

<u>Workshop Evaluation</u> (Included for Workshop Participants T3 (retention) survey)

Thinking back on the success workshop you attended this semester and resources used, please respond to the questions below.

Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Somewhat agree (4)	Agree (5)	Strongly agree (6)

The success workshop activities/discussions had a positive impact on my academic experience this semester.
The success workshop activities/discussions helped me handle academic challenges I faced this semester.
The success workshop activities/discussions gave me more confidence in my academic potential this semester.

Which activity did you find most useful? Check all that apply

[ ] Goal setting

[ ] Academic setbacks & successes

[ ] Student panel

[ ] All of the above

[ ] None of the above

[ ] Other

Describe what way (if any) you applied the activities/discussions from the success workshop this semester.

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To Whom It May Concern,

The above-named person has made a license purchase from Mind Garden, Inc. and has permission to administer the following copyrighted instrument up to that quantity purchased:

Psychological Capital Questionnaire

The three sample items only from this instrument as specified below may be included in your thesis or dissertation. Any other use must receive prior written permission from Mind Garden. The entire instrument form may not be included or reproduced at any time in any other published material. Please understand that disclosing more than we have authorized will compromise the integrity and value of the test.

Citation of the instrument must include the applicable copyright statement listed below.
Sample Items:

Self-Rater Form :

I feel confident analyzing a long-term problem to find a solution.

If I should find myself in a jam at work, I could think of many ways to get out of it.

When I have a setback at work, I have trouble recovering from it, moving on.

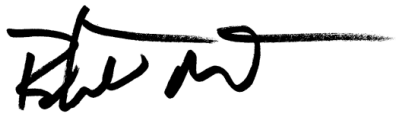
Other Rater Form:

This person feels confident analyzing a long-term problem to find a solution.

If this person should find him/herself in a jam at work, he/she could think of many ways to get out of it.

When this person has a setback at work, he/she has trouble recovering from it, moving on.

Sincerely,



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APPENDIX B

WORKSHOP (PCI) OUTLINE

Activity	**Activity Content**	**Activity Type & Timing**	**Targeted HERO Resource**
Welcome	Overview of what to expect from workshop	Large group (3 minutes)	
Introductions/Content Overview	Individual introductions	Large group (10 minutes)	
Activity 1: Goal Setting	Overview of SMART goals Identify academic goals Generate pathways to these goals Share goals & provide alternative pathways to group members Inventory pathways & remove unrealistic pathways Debrief activity	Large group (10 minutes) Individual (5 minutes) Small group (15 minutes) Individual (5 minutes) Large group (2 minutes)	Hope Efficacy Optimism
Activity 2: Academic Setbacks & Successes	Overview of setbacks & successes Identify a recent academic setback & a success Identify immediate reactions to this setback & success	Large group (5 minutes) Individual (5 minutes)	Efficacy Resilience Optimism

	Discuss reactions to adversity & reframing setbacks Share experiences & discuss how to reframe setbacks & identify what contributed to success Discuss ways to respond to stress (academic) Debrief activity	Large group (10 minutes) Small group (15 minutes) Large group (10 minutes) Large group (5 minutes)	
Activity 3: FG Panel	FG upperclassmen respond to question prompts Debrief activity	Large group (15 minutes) Large group (2 minutes)	Efficacy Optimism
Closing	Recap workshop and provide information on next steps	Large group (3 minutes)	

FG Panel Question Prompts

1. "People come to college for many different reasons. What did coming to college mean to you?"
2. "Students can have a wide variety of experiences when they transition to college and come from many different backgrounds. Thinking back, what was the transition to college like
3. for you?"
4. "Did your decision to attend [university name] affect your relationships with your friends and family at home? If yes, how?"
5. "What would you advise other students to do with backgrounds similar to your own?"
6. "How have you dealt with academic setbacks/challenges?"
7. "Any additional words or advice/wisdom for other FG students?"

APPENDIX C

WORKSHOP (PCI) PARTICIPANT PACKET

Planning for Academic Success: Goal Setting Worksheet

This worksheet will help you to set/define goals, assisting you in successfully achieving your goals.

Step 1. Set Your Goals - Identify 2-3 academic goals

Step 2. Make a Plan – Pick 1 goal to focus on & identify ways you could achieve this goal.

Steps	Time Allocated/Needed	Deadline

Step 3. Look Ahead – For each step above, think about any potential obstacles might arise? How will you overcome each obstacle?

Obstacles that may arise	How I will respond

For each step above think about resources or support may be needed. Do you have access to these resources? If not, what resources do you have access to that may help? How could you obtain access to the resources you need?

Resources/support needed	Resources support I have access to

Step 4. Visualize Your Success – Why is this goal important to you? How will you know you have achieved your goal? What will it feel like to achieve this goal?

Step 5. Finalize Goal – Re-write your goal

Goal	Deadline	Achieved?

Check your work – is your goal a **SMART** goal?

S	Specific	What exactly will be accomplished?
M	Measurable	How will you know when you have reached your goal? Measure your progress?
A	Achievable	How will I accomplish this goal? What resources are needed? How do I access them?
R	Relevant	Is this goal relevant? What meaning does this goal have?
T	Timely	What is the time frame? What is my deadline?

Planning for Academic Success: Responding to Setbacks & Successes

This worksheet will help you to consider responses to academic setbacks and pathways to academic success.

Academic Setbacks: Identify a recent academic setback

Reactions: What were your immediate reactions to the setback?

Immediate Thoughts	Immediate Feelings

Responses: How did you respond to the academic setback? (behaviors/actions taken-if any)

Reflection: How much of the setback do you believe was within your control? Anything part of the setback outside of your control?

Reframing: How could you reframe your reaction to this academic setback (or future setbacks)?

Planning for Academic Success: Responding to Setbacks & Successes

This worksheet will help you to consider responses to academic setbacks and pathways to academic success.

Academic Successes: Identify a recent academic success

Reactions: What were your immediate reactions to the success?

Immediate Thoughts	Immediate Feelings

Reflection: What factors contributed to your success?

Personal	
Academic	
Additional support	
Other	

APPENDIX D

OBSERVER NOTES FORM

Observation: Participants **Date observed:**
Time observed: Start time_____ End time _____ **Number of participants:**

Participant engagement (by activity)

Activity 1: SMART Goals	**Engagement level**			**Are all members of the group participating?**	
Large group	Low	Moderate	High	Yes	No
Small group	Low	Moderate	High	Yes	No
Overall	Low	Moderate	High	Yes	No
Engagement evidence*					
Other notes (exceptions or additional info)					

***For engagement evidence, consider the following:**

- Body language (maintaining eye-contact with speaker, leaning, nodding)
- Task completion (reading instructions, completing handouts, on topic)
- Verbal (commenting and sharing ideas with the group)
- Emotional (laughing, smiling, expressing empathy)

***For disengagement evidence, consider the following:**

- Body language (avoiding eye-contact with speaker, constantly looking at technology)
- Task completion (failure to work on handouts, participating in each task)
- Verbal (refraining from commenting and sharing ideas with the small & large group)
- Emotional (no outward expression of affirming emotion, engagement with others)

Group discussion

Discussion content*	**Supporting quotes**
Other notes	

***For discussion content, consider the following:**

- Describe key themes of discussion – what are some of the key topics that the group is talking about/sharing?

***For supporting quotes, consider the following:**

- Was there anything said that serves to illustrate themes you are hearing in the discussion? Are there quotes/phrases that may be unique to the group? You can include quotes or paraphrase to help illustrate themes.

***For other notes, consider the following:**

- Anything you notice participants agreeing with? Disagreeing with?
- Any exceptions?
- Any clarification asked for by participants on certain topics?
- Any themes in questions asked?

Activity 2: Academic Setbacks & Successes	**Engagement level**			**Are all members of the group participating?**	
Large group	Low	Moderate	High	Yes	No
Small group	Low	Moderate	High	Yes	No
Overall	Low	Moderate	High	Yes	No
Engagement evidence*					
Other notes (exceptions or additional info)					

Group discussion

Discussion content*	**Supporting quotes**
Other notes	

Activity 3: **FG Student Panel**	**Engagement level (select one)**	**Are all members of the group participating? (select one)**
Overall	Low Moderate High	Yes No
Engagement evidence*		
Other notes (exceptions or additional info)		

Group discussion

Discussion content*	**Supporting quotes**
Other notes	

Observation: Facilitator **Date observed:**
Time observed: Start time_____ End time _____ **Number of facilitators:**

Facilitator

Evaluation Areas	**Yes**	**No**	**Unable to Observe**	**Additional Comments**
Facilitator started on time				
Facilitator generally followed activity time limits				
Facilitator kept participants on topic				
Facilitator adhered to the content in the workshop outline.				
Facilitator provided appropriate transitions between activities.				
Facilitator provided adequate instruction for activities planned.				

Facilitator provided summary of workshop and next steps to participants.				

Observation: FG Volunteers **Date observed:**
Time observed: Start time_____ End time _____ **Number FG Volunteers:**

First-Generation Student Volunteers

Evaluation Areas	Yes	No	Unable to Observe	Additional Comments
FG volunteers attended the workshop on time.				
FG volunteers participated in planned activities.				
FG volunteers participated small and large group discussion when appropriate.				
FG volunteers were prepared for the panel activity.				
FG volunteers remained until the end of the workshop.				

Additional observations:

APPENDIX E

WORKSHOP (PCI) PRESENTATION SLIDES

Academic Success Workshop

Viewable at:
https://docs.google.com/presentation/d/1NWcma5J8pa6yuw5TJMHOWCRq4HiQa1uzczO1rripstE/edit?usp=sharing