Psychological Capital & Goal Orientation: A Preliminary Exploration

Alison M. Lueder

A Dissertation Submitted to the Faculty of
The Chicago School of Professional Psychology
In Partial Fulfillment of the Requirements
For the Degree of Doctor of Philosophy in Business Psychology

April 10, 2019
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2019

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Acknowledgements

As a first-generation college student, embarking on a journey towards a doctoral degree meant I was truly carving my own path from start to finish. In the spirit of transparency, I’m not sure I would have ever made it out of the wilderness without the support (insight, guidance, coffee, etc.) I received from the following people.

Dr. Jennifer Thompson, my dissertation chair: Thank you for introducing me to the world of positive psychology during my first semester at The Chicago School many (many, many) years ago. Your perspective changed my entire academic (and professional) trajectory—I get to put this all into practice on a daily basis now, and I couldn’t be happier about it. Thank you for your help and wisdom throughout the years, especially these last few.

Dr. George W. Hay and Dr. Sharon Pappas, my committee members: Thank you for your insight and for your unwavering optimism and reassurance throughout this great adventure. Thank you also for bringing the concept of "aggressive self-care" into my life—it changed everything, and I am better for it.

My parents: As I reach this final academic step, I’ve thought endlessly about my purpose, my goals and what brought me to this path in the first place. What comes to mind, every time, is you. Dad, your incredible work ethic sparked a curiosity in me early on, which eventually led to my discovery of this field. Mom, so much of what I do stems from your relentless support and encouragement for others. I am so grateful for both of you, for your understanding, patience, and unconditional support throughout as I navigated this journey. It feels like I’ve found my calling, and I couldn’t possibly thank either of you enough for this. Thank you for being such wonderful parents and people.
Shortly before beginning the dissertation process, I rescued a kitten who became the most constant source of comfort as I researched, wrote, and revised over the years. Most of these pages were drafted while my cat Neptune slept on my desk, curled around my keyboard. While I realize he won't likely comprehend this acknowledgement any time soon, this section would be incomplete without him.

Finally, to the amazing group of people I’m so fortunate to be surrounded by (friends, classmates, colleagues): There aren't enough words, time, or space to articulate how much your support helped me throughout this process, nor could I ever adequately express how grateful I am for you. As challenging, isolating and difficult as this journey has been, it never felt impossible because of the care I had.

Thank you all for rooting for me, for rallying around me when I needed it most, and for allowing me to share this journey with you. My gratitude is endless.
Abstract

This study provides a preliminary glimpse into the possibilities of connections between psychological capital and goal orientation, as both concepts seem to have similar outcomes, yet no research currently exists linking the two together. This study also examines whether or not focusing on PsyCap in training influences goal orientation outcomes. The ideas are tested with data previously collected through a voluntary, graduate-level positive psychology training course. The study uses various statistical approaches to compare training results at two points in time, before and after the training course/intervention. The results of students who participated in the positive psychology training course are analyzed with students who did not participate in the course to provide an initial understanding of how PsyCap and goal orientation outcomes may be affected over the course of a typical academic semester. The discussion in this study also provides insight into the application of these concepts in organizational/workplace environments. The results of this study offer a preliminary glimpse into the possible relationship between PsyCap and goal orientation, as (to date) this study is the first of its kind to examine these unique concepts congruently in a training setting. Recommendations are provided for future research, as the results point to a promising opportunity to deepen understanding of the potential overlap between these two concepts in the field.
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Chapter 1: Nature of the Study

**Background**

Positive psychology has become a focal point in both workplace and academic environments due to the countless benefits it provides to the individual, the group (team, department, or class), and the organization (company or educational institution) overall. Two concepts in particular, psychological capital and learning goal orientation (often operationalized as 'growth mindset'), have garnered intense popularity as some of the most prominent and well-defined ideas within the current landscape of organizational psychology (Yeager & Dweck, 2012).

A thorough review of existing literature focusing on these concepts revealed a great deal of similarity between them, but a significant lack of research directly linking them. Numerous studies show that both psychological capital and learning goal orientation can successfully be increased through training (Burnette, O'Boyle, VanEpps, Pollack, & Finkel, 2013; Goertzen & Whitaker, 2015; Luthans, Avey, Avolio, & Peterson, 2010). Research also indicates the outcomes of both are very similar in terms of attitude, behavior and performance in both academic and organizational settings, from childhood (Dweck, 1986) through college age (Aronson, Fried, & Good, 2002; Burnette et al., 2013; Payne, Youngcourt, & Beaubien, 2007), and in the workplace as well (Goertzen & Whitaker, 2015; Luthans et al., 2010).

There is a wealth of research associating two of the dimensions within psychological capital, self-efficacy and resilience, with goal orientation (Avey, Luthans, & Youssef, 2010; Cook & Artino, 2016; Payne et al., 2007). Despite these important overlaps, to date, only one study has linked psychological capital with learning goal orientation in any way, though only partially, and only in a workplace setting (Huang & Luthans, 2015). Based on the state of
research on these concepts, a need was identified to investigate the possibility of any interactions between psychological capital, goal orientation, and the elements and dimensions contained within them.

The hypotheses and ideas in this study are tested with data previously collected through a graduate-level positive psychology training course offered to students enrolled in various psychology programs on an entirely voluntary basis. Students' levels of psychological capital, learning goal orientation, and academic engagement were measured through assessments collected before the first class session began and after the final session concluded at the end of the semester. The training classes occurred over eight, one-hour sessions in Fall 2018. The schedule of topics discussed each week is provided in appendix A.

This study is the first of its kind to fully examine the possible connections between psychological capital and goal orientation, the first to examine the deliberate attempt to increase both concepts in the same training/educational intervention, and also the first to explore goal orientation among graduate students.

**Problem Statement**

To date, a study examining the effects and outcomes of training both PsyCap and goal orientation concurrently has not been conducted. Further, no published study has examined the trainability of goal orientation among graduate students.

**Purpose of the Study**

The primary purpose of this study is to provide a preliminary understanding of the relationship between PsyCap and goal orientation among graduate students. Both constructs have proven to be trainable and have similar outcomes in attitudes, behavior and performance in both academic and workplace settings. The specific aim of this study is to determine whether a
synergistic effect occurs when both PsyCap and goal orientation are developed in the same training curriculum.

It is unclear whether one’s level of PsyCap affects a change in their goal orientation in training situations, and whether training both of these constructs results in a significant change to student engagement. Deeper understanding of this relationship provides an opportunity to develop training programs that result in even stronger positive outcomes for academic populations.

**Research Questions and Hypotheses**

This research seeks to answer three main research questions. First, does PsyCap or goal orientation training have an impact on academic engagement? Second, does PsyCap or goal orientation training have a stronger impact on academic engagement? Finally, does the combination of these topics in training have a stronger impact on academic engagement?

Specific hypotheses are as follows:

- **H1**: Participants will experience an increase in PsyCap from Time 1 to Time 2, indicating that the training was effective in increasing PsyCap.

- **H2**: Participants will experience an increase in learning goal orientation from Time 1 to Time 2, indicating that the training was effective in increasing learning goal orientation.

- **H3**: At Time 2, those with higher PsyCap scores will have higher academic engagement scores.

- **H4**: At Time 2, those with higher learning goal orientation scores will have higher academic engagement scores.

- **H5**: Participants with higher levels of PsyCap at Time 1 will experience a higher increase in learning goal orientation at Time 2.
Significance of the Study

This study is the first of its kind in two ways. First, it is the first documented study to explore the full connection between PsyCap and goal orientation in a training setting. Second, this is the first study to examine goal orientation among graduate students.

Achieving a deeper understanding of the relationship between PsyCap and goal orientation, specifically learning goal orientation, provides an opportunity to develop training programs that result in even stronger positive outcomes for academic populations. This has the potential to carry over into the workplace, as many graduate students are currently working, and/or are poised to enter (or re-enter) the workforce following completion of their academic programs.

Summary

This study aims to provide a preliminary understanding of the potential relationship between PsyCap and goal orientation by examining the outcomes of a voluntary positive psychology training course, as reported by the graduate students that participated in it. Chapter 2 addresses the existing knowledge related to this research by discussing PsyCap and goal orientation in detail.
Chapter 2: Literature Review

Introduction

PsyCap has been shown to have numerous desirable outcomes at the individual and team levels, in both academia and the workplace. This has been proven when measuring PsyCap as its own higher-order factor, and when individually measuring each of the dimensions that make up PsyCap. When examining goal orientation, outcomes have proven to be similar to those discovered when measuring PsyCap. A wealth of literature exists that demonstrates the importance of each of these constructs. Yet, despite these overlapping bodies of knowledge, very little research has been conducted to associate the two constructs, in their entirety, on the same level.

This study aims to deepen the current understanding of the connection between PsyCap and goal orientation with the overall purpose of determining whether a synergistic relationship exists between the two constructs. In order to fully understand the scope of this study, certain key areas must be discussed including the existing research on PsyCap, current research on goal orientation, and what is currently known about the relationship between PsyCap and goal orientation.

Psychological Capital

The concept of PsyCap grew out of the positive psychology movement, which gained traction at a time when the ratio of research in the psychology field skewed heavily toward human dysfunction, focusing on disorders, stress, depression, anger, etc., versus optimal human functioning, such as happiness, flow, and flourishing (Luthans, Luthans, & Avey, 2014). While other areas of ‘capital’ highlight what you have (economic capital), what you know (human capital) and who you know (social capital), PsyCap focuses on who you are and, of key
developmental significance, what you can become—essentially developing one’s current self to become the possible self (Luthans et al., 2014; Luthans, Avey, Avolio, Norman, & Combs, 2006; Luthans & Youssef, 2004).

PsyCap serves to measure the positive capacities an individual possesses for the purpose of improving performance, in both academic and organizational settings (Luthans et al., 2014; Luthans & Youssef, 2004). This review focuses on the four dimensions that form PsyCap, outcomes of PsyCap, and the trainability of PsyCap.

**Psychological Capital Dimensions**

PsyCap consists of four psychological dimensions: hope (the ability to create and achieve goals), self-efficacy (confidence in one’s ability to achieve a goal), resilience (the ability to recover after setbacks and adversity) and optimism (the ability to have a positive and realistic outlook) (Luthans, 2002a; Luthans, Avolio, Avey, & Norman, 2007). Although these constructs have been proven to have conceptual and psychometric distinctions among themselves, they form a higher-order, core construct when measured together (Luthans et al., 2007). In other words, measuring PsyCap as a whole will show stronger results than measuring and combining the results of the individual constructs themselves (Larson & Luthans, 2006). Despite this effect, it is worthwhile to discuss hope, self-efficacy, resilience and optimism separately as each dimension is comprised of its own distinct qualities, has specific empirical outcomes, and can be individually developed.

**Hope.** Hope contains two components in relation to goals: agency and pathways (Snyder, 2002). Agency is one’s determination to create and work towards goals (Luthans, 2002a). Pathways are the different routes one can take to accomplish a goal. The idea of pathways in this context is specific to the PsyCap definition of hope (Luthans et al., 2007). Agency is considered
‘willpower’ to achieve a goal, and pathways are considered ‘waypower’, or alternate plans that are created in anticipation of obstacles (Luthans et al., 2010).

In order to have hope, one must have a goal that is desirable and considered worth the effort to achieve (Snyder, 2002). The key to increasing hope is to generate multiple pathways to a goal, and to anticipate roadblocks and obstacles (Avey, Luthans, & Youssef, 2010).

Hope has consistently proven to be predictive of academic performance (Curry, Snyder, Cook, Ruby, & Rehm, 1997; Luthans, Luthans, & Jensen, 2012; Snyder et al., 2002). Hope also enables students to set meaningful goals and muster the motivation to achieve them (Snyder, 2002).

**Self-efficacy.** Self-efficacy, initially based in social cognitive theory, is one’s confidence regarding goal achievement (Bandura, 1977; Luthans, 2002a). This is an individual’s belief that they can be successful in tasks they undertake (Avey et al., 2010). Successful achievement reinforces self-efficacy, whereas failures weaken it (Cook & Artino, 2016). Individuals with high levels of self-efficacy enter potentially stressful situations with confidence and are able to resist stressful reactions. Conversely, individuals with low levels of efficacy often expect to fail and as a result, experience stress and anxiety more regularly (Luthans et al., 2014).

Self-efficacy provides the foundation for motivated action (Cook & Artino, 2016). Because of this, it is a strong predictor of academic performance and success (Chemers, Hu, & Garcia, 2001; Luthans et al., 2012; Valentine, DuBois, & Cooper, 2004). Self-efficacy has also been found to mediate students’ levels of effort, persistence and perseverance (Zeldin & Parajes, 2000). In the workplace, increasing self-efficacy has also resulted in higher levels of employee engagement (Straetsman, 2015).
One of the most successful ways to develop self-efficacy is task mastery. If an individual successfully accomplishes a challenging task, they typically feel more confident in their ability to accomplish the task again (Bandura, 1977).

**Resilience.** Resilience is one’s ability to recover from setbacks and adversity (Luthans, 2002a). Within PsyCap, the specific definition of resilience includes a learning reaction to any event, including positive ones (Luthans & Youssef, 2004). Resilient individuals can adapt in the wake of negative experiences and changes, instead of remaining devastated or “stuck” (Luthans et al., 2010). In some cases, a resilient individual would be able to exhibit growth above and beyond their original state (Luthans, Youssef-Morgan, & Avolio, 2015).

In academic settings, students with higher levels of resilience have demonstrated stronger academic performance (Luthans et al., 2012; Martin & Marsh, 2008). Resilience in students has also predicted enjoyment of school, participation on class and self-esteem (Martin & Marsh, 2006). In the workplace, resilient employees tend to also be more engaged in the workplace (Straetsman, 2015).

**Optimism.** In the context of PsyCap, optimism is an individual’s ability to have a positive and realistic outlook (Luthans et al., 2007). Optimistic individuals also feel confident making progress after ruling out an unrealistic expectation (Luthans et al., 2007). There are two significant theories to support optimism in positive psychology: explanatory style and expectancy theory.

The first theory of optimism is explanatory style, or how an individual explains situations to themselves (Seligman, 2006). Explanatory style involves three components: permanence, pervasiveness, and personalization (Seligman, 2006).
Permanence considers how long something lasts or how frequently it occurs. Explaining bad events as permanent produces feelings of helplessness, whereas explaining bad events as temporary develops resilience. Optimistic people tend to explain negative events as temporary and positive events as permanent (Seligman, 2006).

Pervasiveness looks at how widespread something is. In the case of success and failure, optimists tend to attribute success to a universal explanation such as a widespread skill, like their intelligence, and failure to a specific explanation, such as an isolated characteristic of someone else. Those who are less optimistic attribute success to specific instances, like an ability to memorize a specific piece of information, and failure to universal generalizations, such as all schools being unfair (Seligman, 2006).

The last component of explanatory style, personalization, considers whether the situation is attributed to internal or external events. Individuals who internalize and blame themselves for failure tend to have lower self-esteem and feel they are worthless or talentless. People who externalize do not lose self-esteem in the wake of failure, and generally like themselves more than their counterparts (Seligman, 2006).

The other theory of optimism is based on expectancy theory, or the belief that optimistic individuals expect that positive outcomes will result from increased levels of effort (Carver & Scheier, 2002). In this context, individuals with higher levels of optimism are more inclined to put forth effort despite challenges and setbacks (Carver & Scheier, 2002).

In academic settings, students with more optimistic outlooks significantly outperform those with pessimistic outlooks (Luthans et al., 2012; Ruthig, Perry, Hall, & Hladkyi, 2004; Solberg, Evans, & Swergstrom, 2009; Valentine et al., 2004).
Optimism was initially considered trait-like, meaning it was unlikely to be changed through intervention (Scheier & Carver, 1985). However, recent research has proven the existence of “learned optimism” and it has successfully been increased in developmental interventions (Carver & Scheier, 2002; Seligman, 2006).

The constructs of hope, self-efficacy, resilience, and optimism provide an individual’s overall level of PsyCap when examined together. Measuring PsyCap as its own construct has proven to have a stronger effect than the sum of its constructs combined (Larson & Luthans, 2006). Each of the four dimensions has its own qualities and outcomes, but due to the synergistic and higher-order nature of PsyCap, it follows that PsyCap is tied to a host of beneficial outcomes when examined as its own construct.

**Psychological Capital Outcomes**

PsyCap is tied to a host of beneficial outcomes on both individual and collective (team-based or organizational) levels. PsyCap has also proven to be significantly successful in both academic and workplace settings. Favorable PsyCap outcomes range from better attitudes and higher levels of engagement to more positive behaviors and increased performance overall (Avey, Reichard, Luthans, & Mhatre, 2011; Sager, 2018; Straetsman, 2015). PsyCap has been proven to predict performance and job satisfaction better than any of the individual constructs that make it up (Luthans et al., 2006). PsyCap outcomes can be grouped into attitudes, behaviors, performance and well-being as well, regardless of setting.

**Attitudes.** Meta-analytic research shows PsyCap has positive correlations with many attitudes, including organizational commitment and job satisfaction (Avey et al., 2011). Employees with high levels of PsyCap are less likely to want to leave their jobs. PsyCap is also
negatively related to adverse attitudes such as cynicism towards change and the proclivity of
giving up when faced with a challenge (Avey et al., 2011).

Employees with high levels of PsyCap tend to believe they can create their own success,
demonstrating both hope and self-efficacy. They generally expect positive things to happen at
work and may possibly be willing to put in the sustained effort to ensure good things will
happen, which demonstrates optimism. They are also more likely to bounce back in the wake of
adversity, demonstrating resilience (Avey et al., 2011).

In a recent study, increasing hope had a stronger impact than PsyCap on increasing
engagement (Straetsman, 2015), although PsyCap was still found to be a significant predictor.
Overall, PsyCap has proven to be a significant predictor of employee engagement (Ratzlaff,
2016; Sager, 2018). Within the context of organizational change events, PsyCap has also proven
to be the most influential factor in determining employee engagement as well (Sager, 2018).

In academic settings, PsyCap has proven to predict autonomous motivation, meaning that
tasks are done because they are found to be intrinsically or personally meaningful and satisfying
by the student. PsyCap also negatively predicts amotivation, or a lack of motivation to perform,
in school settings as well (Datu, King, & Valdez, 2016).

**Behaviors.** PsyCap has positive correlations with organizational citizenship behaviors
(OCBs) in the workplace, and negative correlations with organizational deviance (Avey et al.,
2011). OCBs can be individual- or organizational-oriented, depending on who benefits from
them. An individual-oriented OCB benefits another employee(s) within the workplace, such as
the case of an individual staying late to help a colleague with a challenge or someone going out
of their way to help a new hire acclimate to their role (Lee & Allen, 2002). On the organizational
level, an individual with high levels of PsyCap may be inclined to attend a volunteer event
sponsored by their organization (Avey et al., 2011).

Organizational deviance behaviors include actions such as gossiping about colleagues, and more serious offenses such as stealing or bullying someone at work. PsyCap is proven to have a significant, negative relationship with organizational deviance behaviors (Avey et al., 2011).

Behaviors in academic settings are not typically captured in terms of citizenship and deviance. Further, very little research exists to document the relationship between academic citizenship-type behaviors (voluntarily attending school-sponsored events, taking the time to get to know a new student) as well as deviance behaviors (bullying, gossip). Therefore, the behavioral outcomes of PsyCap in academic settings are an unknown area.

**Performance.** Overall, PsyCap has been found to significantly predict higher levels of employee performance in workplace settings. This holds true regardless of whether the measure of performance is self-reported, found within a supervisor evaluation, or is derived from a form of objective performance, such as sales (Avey et al., 2011; Luthans et al., 2010).

As discussed, PsyCap predicts optimal academic outcomes such as autonomous motivation and engagement but has also been found to be a significant predictor of academic performance as well (Datu et al., 2016). In a different study, the relationship between PsyCap and academic performance was shown to be significant and predictive, above and beyond the average number of hours devoted to schoolwork and even the student’s year in school (Luthans et al., 2012).

**Well-being.** While outcomes have been proven to exist within workplace and academic settings, across individual attitudes, behaviors and performance, it is important to discuss
PsyCap’s beneficial impact on the individual on a holistic level. Individuals with high PsyCap are better equipped to handle obstacles and, as a result, benefit from higher levels of well-being overall (Avey et al., 2011). Negative relationships exist between PsyCap and cynicism, stress and anxiety, further illustrating an individual’s ability to handle and recuperate from setbacks regardless of context (Avey et al., 2011).

In one study involving only entrepreneurs, higher levels of PsyCap were found to have a positive relationship with their well-being specifically through the reduction of stress (Baron, Franklin, & Hmieleski, 2013; Newman, Ucbasaran, Zhu, & Hirst, 2014). Job demands create strain on individuals, including psychological exhaustion and impaired health, and PsyCap has been shown to counteract and suppress the associated stresses and anxieties of these conditions (Avey et al., 2011; Bakker & Demerouti, 2006). The ability of PsyCap to influence well-being in these ways has been found to occur over time as well (Avey, Luthans, Smith, & Palmer, 2010; Culbertson, Fullagar, & Mills, 2010; Luthans et al., 2007).

Overall, the positive outcomes of PsyCap benefit individuals in several ways and in within both organizational and academic settings, often in similar ways. These outcomes are observed in the form of improved performance, increased behaviors and more positive attitudes. Individuals with higher levels of PsyCap naturally exhibit these attitudes, behaviors and/or performance more often than individuals with lower levels of PsyCap. However, as PsyCap is also predominantly state-like and trainable, interventions to increase an individual’s overall level of PsyCap have successfully been carried out with documented increases in these outcomes as well.
Trainability of Psychological Capital

Despite some debate, research shows that PsyCap is predominantly state-like, and can be developed over time (Luthans, 2002b). This has proven to be true in both organizational and academic environments (Avey et al., 2011; Datu et al., 2016; Luthans et al., 2012). Interventions to increase PsyCap have historically had successful, positive impacts in overall PsyCap levels, and attitudes, behaviors and performance has improved as a result (Luthans, Avey, & Patera, 2008). To capitalize upon the synergy among the four PsyCap dimensions of hope, self-efficacy, resilience and optimism, a series of training interventions would need to acknowledge each of these constructs in a way that builds their interconnectedness, with the underlying intent of increasing the level of PsyCap overall.

PsyCap training has also proven to be successful in both in-person (‘on ground’ or ‘live’) and online (web-based) modalities (Goertzen & Whitaker, 2015; Johnson, 2018; Luthans et al., 2014; Luthans et al., 2010; Luthans et al., 2008). However, despite studies resulting in significant and positive changes to PsyCap and its numerous outcomes, the results have only been short-term until recently. This section will discuss both training modalities as well as the short- and long-term effects of PsyCap training interventions.

More recent research has emerged indicating that PsyCap can also be successfully developed in self-driven, web-based formats as well (Luthans et al., 2008). In one study, trainees participated in two online, pre-recorded sessions, the first of which focuses on resilience and self-efficacy, and hope and optimism in the second.

Definitions and popular movie clips relating to each of the constructs are presented in an interactive format, guiding participants through the sessions. The first session covers the general definitions and workplace applications of resilience and self-efficacy. Before concluding,
participants are asked to think of work-related situations in which they feel “stuck.” They must then create a list of actions that are within their control to address the situation.

The session ends with a brief synopsis of what was covered and how to utilize these techniques at work. This process intends to build thoughts, processes and behaviors to increase resilience and self-efficacy (Luthans et al., 2008).

The second session focuses on increasing hope and optimism through goal development. Material covers the importance of personal values and the challenges surrounding task and goal accomplishment. Participants are asked to create a list of workplace-appropriate goals, all of which must be “personally valuable” and “realistically challenging.” These terms are defined clearly in the session with several examples and are based on a familiar framework of hope development (Snyder, 2000).

After the participant chooses a goal that feels challenging, they must then identify smaller goals and create action plans to accomplish them. This is known as “stepping” and builds hope through willpower (Luthans et al., 2008). Breaking goals down into achievable smaller steps, or “stepping”, allows the predominant goal to appear more attainable, which increases general expectations of success. This process aims to build optimism, hope and self-efficacy (Luthans et al., 2008).

Participants are finally asked to identify positive outcomes and associated activities to lead to goal attainment. This process reduces the opportunity for negative expectations to form, which increases optimism in a separate manner (Luthans et al., 2008).

This second and final session aims to increase hope, optimism and self-efficacy, adding to the resilience and self-efficacy techniques covered in the first session. This training
intervention aims to develop each of the four state-like PsyCap dimensions with the general goal of increasing participants’ levels of PsyCap (Luthans et al., 2008).

This study was the first to determine that PsyCap could successfully be developed in a brief (2-hour), self-driven, online format. The control group underwent a different, unrelated intervention and did not show a significant increase in PsyCap (Luthans et al., 2008). This illustrates the possibility of successfully developing PsyCap in a short, relatively accessible, and successful way.

**Short- and long-term effects of training.** Until recently, all interventions that successfully increased PsyCap were only ever proven to have immediate results. No published research documented longevity with any successful PsyCap interventions. A very recent study—the first of its kind—established a PsyCap training intervention with positive and lasting (4-month) effects (Johnson, 2018).

This study was also the first to measure the effects of character strengths on PsyCap. Character strengths are defined as positive thoughts, feelings and behaviors about one’s trait-like skills (Peterson & Seligman, 2004). These can be broken into 6 categories or “virtues” and, when enacted, lead to optimal human functioning and increased life satisfaction (Dahlggaard, Peterson & Seligman, 2005; Harzer & Ruch, 2013; Park, Peterson, & Seligman, 2004; Peterson & Seligman, 2004). Two examples of these virtues and their associated strengths are wisdom/knowledge (creativity, curiosity, judgment, love of learning, and perspective), and courage (bravery, perseverance, honesty, and zest) (Peterson & Seligman, 2004).

This novel study proved that PsyCap can be significantly developed with lasting results, when trained in combination with character strengths. Although character strengths are trait-like
and thus more stable than state-like characteristics, it is possible for them to be developed, though the process is considerably more difficult (Johnson, 2018).

Individuals who participated in PsyCap-only training showed an increase in PsyCap levels at the intervention’s immediate conclusion ($M = 4.90, p < .001$; Johnson, 2018). However, those levels then significantly decreased between the conclusion of the training and the four-month follow-up ($M = 4.45, p < .001$), resulting in PsyCap levels that were even lower levels than before training began ($M = 4.59$; Johnson, 2018). This is consistent with existing theory regarding skill decay (Arthur, Bennett, Stanush, & McNelly, 1998).

Individuals who underwent a combination training intervention, with objectives in both character strengths and PsyCap, showed an increase in PsyCap immediately after training ($M = 4.99, p < .01$) that remained stable during the four-month follow-up period ($M = 5.07$; Johnson, 2018).

One possible theory to explain the immediate impact of PsyCap training, but nothing further, concerns the phenomenon of skill decay. As time passes following an intervention’s conclusion, the skills learned begin to decay, with the participant eventually reverting to baseline skill levels (Arthur et al., 1998). Because PsyCap is state-like, training it in conjunction with trait-like constructs such character strengths can provide more permanence to intervention effects and lasting outcomes (Johnson, 2018). One reason for this concerns the overlapping outcomes for both constructs.

Both character strengths and PsyCap have similar outcomes in terms of job satisfaction, engagement, and positive emotions overall. It makes logical sense then that a training intervention intended to build character strengths, which are trait-like and more stable, would
reinforce and provide longevity to the positive effects on PsyCap’s state-like dimensions (Johnson, 2018).

By incorporating a trait-like construct into PsyCap training, its effects can reach new and heightened levels of permanence (Johnson, 2018). Because PsyCap training can be successful in either modality as well, this in turn further promotes the case for more robust PsyCap training intervention development.

**Summary of PsyCap**

Although individuals high in hope, self-efficacy, optimism and resilience experience numerous benefits in both academic and organizational contexts, the higher-order construct of PsyCap has proven to be an even stronger predictor of success and benefit in these areas. Because each of the dimensions are state-like and can be developed through training, increasing PsyCap can have an even greater impact on those benefits for the individual level and for the organization, when considering workplace outcomes.

However, not much is yet known on how to sustain the effects of a PsyCap intervention. To date, one study has demonstrated that training PsyCap in tandem with a more trait-like construct, such as character strengths, can produce longer-lasting outcomes (Johnson, 2018). It is therefore worth examining whether another construct can be trained along with PsyCap to reach such elevated outcomes.

**Goal Orientation**

Goal orientation refers to the way one understands and reacts to tasks, resulting in different cognitive, affective and behavioral patterns (Dweck & Leggett, 1988). In other words, goal orientation refers to one’s dispositional or situational goal preferences in achievement situations (Payne et al., 2007). The concept of goal orientation grew out of educational
psychology, and a great deal of research exists on its academic application and outcomes. However, there is also a great deal of utility in exploring its fit in organizational settings as well. This section of the literature review will discuss the history and evolution of goal orientation theories into the understanding at present (including language and current models), outcomes of the two main goal orientation dimensions, and the overall trainability of goal orientation.

**History of Goal Orientation**

Early researchers attempted to apply achievement motivation theory to classrooms after observing students approach challenges with vastly different styles, establishing the concept of goal orientation. When faced with a challenge, some children would speak ill of the task or their ability to achieve it, employ maladaptive strategies, and eventually develop feelings of helplessness despite having high levels of ability. Other children would flourish and seem to welcome the idea of a challenge (Dweck & Leggett, 1988). This section will discuss learning and performance goal types, corresponding goal orientations, and characteristics of those orientations.

Foundational research suggested that children hold either learning goals/are learning-oriented or they hold performance goals/are performance-oriented (Dweck, 1986). Learning-oriented individuals strive to understand new information and approach tasks as an opportunity to increase their knowledge. Conversely, performance-oriented individuals tend to want to demonstrate, or perform, their competence and attempt to gain favorable judgments—or avoid negative judgments—from others (Dweck & Leggett, 1988). The earliest research on goal orientation purported that individuals can be learning- or performance-oriented, depending on whether the individual’s goal was to develop their ability or to demonstrate their ability, respectively (Dweck & Leggett, 1988).
In another foundational study, a significant distinction was made within the concept of goal orientation by theorizing that the type of goal one sets is based on their personal beliefs regarding the stability of intelligence, or their implicit theory of intelligence (Bandura & Dweck, 1985; Dweck, 1986; Elliott & Dweck, 1988; Payne et al., 2007). Individuals who believe that personal traits (intelligence/intellectual ability) are malleable and can be improved or developed with effort tend to adopt an **incremental theory** tend to believe that personal traits. Conversely, individuals who believe that those same traits are fixed and cannot be changed tend to adopt an **entity theory** (Diener & Dweck, 1978; Leggett & Dweck, 1986). Neither of these theories are related to ability, education, or cognitive ability (Dweck, Chiu, & Hong, 1995; Payne et al., 2007).

Meta-analytical research has conceptualized goal orientation as a disposition, meaning it is more trait-like and permanent than state-like (Payne et al., 2007). A bedrock cognitive development model related goal orientation to children’s implicit theories of intelligence and showed that the individually held intelligence theories remain relatively stable over time (Dweck, 2000).

However, goal orientation has also been successfully influenced by situational characteristics as well, alluding to its trainability. This has happened largely in educational settings (ranging from early childhood through college), but in the workplace as well. In learning and training contexts where emphasis was placed on achievement (grades and performance, rewards for winning/being first), individuals may demonstrate performance-orientations given the environment (Harris, Yuill, & Luckin, 2007; Payne et al., 2007).

In school settings in particular, it may be useful to distinguish between children who show consistent patterns of behavior indicating a strong approach to learning, and those who are
less consistent and may be more open to contextual influences. The impact of strong environmental clues suggests that the types of goals children adopt may be situationally influenced (Button, Mathieu, & Zajac, 1996; Harris et al., 2007).

One’s adopted theory of intelligence influences not only how they judge themselves but how they judge other people as well (Chiu, Hong, & Dweck, 1997). Entity theorists tend to expect people to exhibit more behavioral consistency, as they are likely to focus on traits and trait evaluation (Chiu et al., 1997). Incremental theorists feel less confident making predictions about someone’s behavior in new situations (Chiu et al., 1997; Plaks, Stroessner, Dweck, & Sherman, 2001).

This adopted theory of intelligence is also a proven precursor for one’s goal orientation (Elliot & Hulleman, 2017). Entity theorists are more inclined to approach a task with the intention of proving or documenting their fixed ability level, because they believe that intelligence cannot be changed (Robins & Pals, 2002). Entity theorists are therefore more likely to adopt performance goals, or a performance goal orientation (PGO). Incremental theorists tend to adopt learning goals, or a learning goal orientation (LGO), because they believe intelligence and abilities can be increased, and they enjoy learning new information for the sheer sake of it (Burnette et al., 2013; Dweck, 1986; Dweck & Leggett, 1988; Payne et al., 2007). While incremental theorists naturally tend to set learning goals most of the time, individuals in this orientation may not even set performance goals at all (Burnette et al., 2013).

Early research on these goal orientations produced so much knowledge on the benefits of LGO and the drawbacks of PGO that until relatively recently, this went nearly unchecked. However, each goal orientation has its own desirable and adverse qualities.
**Learning goal orientation.** Learning goal orientations, or LGOs, tend to promote “mastery-oriented” responses to challenges (Diener & Dweck, 1978). LGO individuals proactively seek out challenging tasks, set realistic goals, and are able to persist even in difficult circumstances (Payne et al., 2007). In the face of failure, high LGO individuals experience less anxious reactions (Plaks & Stecher, 2007). LGO individuals also tend to meet challenges with an optimistic approach, as challenges are considered opportunities to increase learning.

Individuals high in LGO are driven to achieve mastery of a given task (Payne et al., 2007). Mastery-oriented individuals focus on the learning and proficiency surrounding a task, instead of the performance of it (Porath & Bateman, 2006). These individuals also retain positive expectations about future success and are driven to develop the abilities necessary to accomplish future tasks as well (Burnette et al., 2013; Porath & Bateman, 2006). LGO individuals are able to avoid negative emotions, and even individuals with low confidence will proactively choose challenging tasks if they have an LGO (Burnette et al., 2013; Cook & Artino, 2016).

Because of the foundational reliance on self within LGO, individuals within this orientation exhibit increased levels of motivation, positivity and increased performance (Leggett, 1985). In the instance of failure to achieve the goal, mastery-oriented individuals are significantly less likely to experience the negative emotional consequences such as lower self-efficacy and motivation due to higher levels of persistence, self-determination and willingness to seek help (Dahling & Ruppel, 2016; Porath & Bateman, 2006).

Mastery goals are sometimes considered superior than their counterpart with regard to learning processes and outcomes because they are borne out of internal motivation (DeGeest & Brown, 2011; Elliot & Hulleman, 2017). However, attempting to achieve mastery is not necessarily inconsistent with striving to outperform others, as this can still be a quality of the
learning goal orientation (Janssen & Van Yperen, 2004). One possible drawback of LGO is that the learner may fixate on specific areas of interest rather than studying a concept in broad terms or may chase random paths of knowledge based entirely on interest (Cook & Artino, 2016).

Another general drawback of LGO is that it may decrease as one ages, as well (Kooij & Zacher, 2016). Particularly in the workplace, goal focus may shift away from learning and more towards performance as an individual ages and gains more experience in their role, regardless of an organization’s industry in most developed countries (Dweck, 1986; Kooij, De Lange, Jansen, Kanfer, & Dikkers, 2011; Kooij & Zacher, 2016). Older workers may feel they have less remaining time at work than younger workers, which lowers the chances that their goals will be focused on learning new material (Kooij & Zacher, 2016).

**Performance goal orientation.** The most significant characteristic of the performance goal orientation, or PGO, is to appear competent—or, at the very least, to avoid appearing incompetent (Bandura & Dweck, 1985). In industries requiring standardization or where speed and efficiency of operations are favored over mastery and understanding, PGO may be the more advantageous orientation as mastery (in LGO) often takes considerably more time (Che-Ha, Mavondo, & Mohd-Said, 2014).

The PGO individual aims to receive a favorable response from an audience, consistently seeking rewards and external approval, possibly substituting actual self-fulfillment for self-presentation (Baumeister, 1982). High PGO individuals are likely to be pointedly concerned with the way they present themselves, consistently hoping to look better than others (Porath & Bateman, 2006). Individuals in this orientation may seek feedback to validate rather than develop their ability, since they view ability as unchanging (Merriman, Clariana, & Bernardi, 2012; VandeWalle, 2003).
It is important to note that for PGO individuals, the favorable response they are hoping to receive can be in the form of a grade in school, or a high performance review rating at work. These rewards can reinforce positive patterns of behavior and can be beneficial, especially in competitive contexts (Eum & Rice, 2011; Payne et al., 2007; Van Yperen & Orehek, 2013; VandeWalle, 2001).

However, in the face of a challenge, individuals in the performance orientation tend to focus on their own inadequacies which can result in lower performance levels overall (Porath & Bateman, 2006). When facing a particularly risky challenge, high PGO individuals are likely to exhibit signs of anxiety and stress, and/or may possibly lose motivation to the point of avoiding the task entirely (Bandura & Dweck, 1985; Porath & Bateman, 2006).

PGO individuals have a goal to receive a favorable response from an audience, which is less likely to happen in a challenging situation. Further, they tend to believe that intelligence and abilities are fixed, or not malleable. Because of this, PGO individuals tend to feel that their chances of success—of receiving that favorable response—are low when it comes to challenges (Payne et al., 2007; Porath & Bateman, 2006).

They are more likely to magnify their failures, forget their successes and adopt defensive or self-sabotaging behaviors (Cook & Artino, 2016). They may also lose motivation after even a small setback (VandeWalle, 2012).

Further, PGOs have been shown to result in maladaptive, “helpless” response patterns (Diener & Dweck, 1978; Nicholls, 1984). This is characterized by a deterioration of performance when faced with a challenge, or a tendency to avoid challenges at all (Diener & Dweck, 1978). High PGO individuals have reported giving up in challenging situations more often than their counterparts (Robins & Pals, 2002).
For individuals with high PGO, self-worth is based on external validation (Burhans & Dweck, 1995; Molden & Dweck, 2006; Mueller & Dweck, 1998). High PGO individuals may approach achievement situations in ways that make them more psychologically vulnerable as a result of this. In academic settings, this can be deeply impactful on one’s self-esteem (Robins & Pals, 2002).

In addition to failure, success is also attributed externally for high PGO individuals. In one academic study, high PGO students showed several helpless responses to both success and failure. They attributed their achievements to external sources: luck, class difficulty (or ease) and the relative abilities of their peers. Failure was associated to a lack of sufficient ability, but success was not attributed to their own high ability (Robin & Pals, 2002).

High PGO individuals strive for external, visible achievements as a way to prove their ability, yet they often attribute their successes to luck. By doing this, high PGO individuals can be caught in truly helpless cycles as they believe neither their successes nor their failures are within their control (Robins & Pals, 2002).

**The 2x2 model.** By incorporating the archetypal approach-avoidance dimensions of motivation into the orientations, the 2x2 achievement goal model was born (Elliot & McGregor, 2001). This 2x2 model, covering performance-approach and performance-avoid orientations, as well as learning-approach and learning-avoid orientations, is currently the most commonly recognized and utilized model of goal orientation.

Foundational research painted performance orientation as being less beneficial than learning orientation, but positive attributes of this orientation do exist. Similarly, the learning orientation was historically considered the superior of the two, with little knowledge regarding any possible drawbacks. Incorporating the approach-avoid dimension within both the
performance and learning orientations, allowed for a deeper understanding of the benefits within the performance orientation. It also provided space to explore the drawbacks within the learning orientation as well.

Within the approach layer of this model, individuals actively work to achieve positive outcomes in both learning and performance orientations. In the avoid layer, an individual works to avoid negative outcomes, including failure (Elliot, 1999; Elliot & McGregor, 2001; Van Yperen, Blaga, & Postmes, 2015). There are universal benefits associated with the approach layer, regardless of whether the individual is learning- or performance-oriented. Similarly, there are also drawbacks associated with the avoid layer, regardless of whether the individual's goal orientation (Elliot & McGregor, 2001; Van Yperen et al., 2015). Higher levels of performance, achievement and motivation occur within the approach orientation in both learning and performance orientations. In the avoid layer, lower levels of performance, motivation and engagement occur in both learning and performance mindsets (Elliot & McGregor, 2001; Van Yperen et al., 2015).
### Table 1

**The 2x2 Achievement Goal Framework**

<table>
<thead>
<tr>
<th>Valence</th>
<th>Dimension</th>
<th>Intrapersonal (learning)</th>
<th>Normative (performance)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Positive</strong> (approaching success)</td>
<td>Learning-approach goal</td>
<td>Performance-approach goal</td>
<td></td>
</tr>
<tr>
<td><strong>Negative</strong> (avoiding failure)</td>
<td>Learning-avoidance goal</td>
<td>Performance-avoidance goal</td>
<td></td>
</tr>
</tbody>
</table>

*Note: Modified by Elliot & McGregor, 2001.*

**Performance-approach & performance-avoid orientations.** Initially, only the performance goal orientation was split by the 2x2 model. The results were *performance-approach* orientation (in which one would actively seek a favorable performance outcome), and *performance-avoid* orientation (in which one would actively try to avoid a negative outcome) (Elliot, 1999). For example, an individual within the *performance-approach* orientation might proactively seek feedback and then use the knowledge gained to outperform others, as their efforts are geared towards achieving a favorable outcome. This type of behavior is specific to this orientation (Porath & Bateman, 2006).

**Performance-approach** is the most productive orientation within the performance domain. Performance-approach goals focus on building competence in relation to others. The overall goal of the performance orientation is to receive a favorable response from an audience, and this is the proactive layer of the of the 2x2 model for the orientation (Payne et al., 2007). The goal for performance-approach aim to build their own competence and do better than their peers (Elliot & McGregor, 2001). These goals have more association with higher achievement outcomes than learning/mastery goals, as those are associated with greater interest and deep
learning (Cook & Artino, 2016). Individuals in this orientation seek to do better than their peers (Elliot & McGregor, 2001).

Performance-approach individuals want to outperform others but may solicit feedback in order to strategize beforehand (Porath & Bateman, 2006; Van Yperen et al., 2015). Because of this, individuals within this orientation may benefit from higher levels of perceived competence (Bell & Kozlowski, 2002).

The performance-avoid orientation is the least productive of all four dimensions in the 2x2 model. Individuals in this orientation set goals that focus on avoiding the perception of incompetence in relation to others (Payne et al., 2007). Performance-avoid individuals often worry and do not typically seek help for fear of being seen as inept (Elliot & Hulleman, 2017; Elliot, Murayama, & Pekrun, 2011).

Performance-avoid individuals tend to act primarily out of fear and create goals that avoid poor performance (Elliot & McGregor, 2001). They avoid negative outcomes and risks because they fear failure, but they are also likely attributing their levels of success externally as well (Porath & Bateman, 2006; Robins & Pals, 2002). This orientation truly allows individuals to fall into patterns of helplessness, preventing them from being able to perform at high levels as they operate with a very narrow focus on avoiding failures (Porath & Bateman, 2006).

Splitting the performance goal dimension into -approach and -avoid orientations allowed researchers to discover certain crucial benefits within the domain that were not previously understood. It followed that making the same split on the opposite orientation may provide an opportunity for researchers to identify and understand any negative qualities within the learning goal orientation.
**Learning-approach and learning-avoid orientations.** Learning-approach oriented individuals ultimately strive to outperform themselves (Elliot & McGregor, 2001). Individuals with a learning-approach orientation are the most focused on self-improvement, making them the most industrious and flexible individuals among all within the achievement goal orientation model (Van Yperen et al., 2015). It is important for them to understand a task, concept or challenge as thoroughly as possible (Elliot & McGregor, 2001).

The learning-approach orientation focuses on working towards and achieving success rather than avoiding failure. Individuals may set strong learning-approach goals if failing to capitalize upon a learning experience is particularly painful to them (Burnette et al., 2013). However, despite these conditions, learning-approach individuals are better equipped to persevere when failure presents itself. They are able to remain focused on self-improvement throughout the process and are not worried by competition or self-preservation in the face of others (Sideridis & Kaplan, 2011; Van Yperen et al., 2015).

Learning-avoid oriented individuals aim to avoid doing worse than they’ve done before (Van Yperen, Elliot, & Anseel, 2009). In this orientation, the effort remains focused on learning and mastery, but the goal is now to avoid a negative outcome, such as not learning all that they possibly could.

Operating in this orientation can result in negative consequences for the individual (Elliot & Hulleman, 2017; Elliot & McGregor, 2001; Howell & Buro, 2008). Individuals in the learning-avoid orientation often procrastinate (Howell & Buro, 2008). They spend time and effort actively avoiding a negative outcome at the expense of achieving an outcome at all (Elliot & Hulleman, 2017). Other emotional and mental consequences of this orientation are overly high self-criticism, perfectionism, shame, guilt, and low self-esteem (Elliot & Hulleman, 2017).
Until the development of the 2x2 model, learning orientation was generally accepted as superior to performance orientation. The addition of the model’s approach-avoid dimension to both orientations provided a needed understanding of the positive outcomes within performance orientation and the undesirable outcomes within learning orientation (Baranik, Barron, & Finney, 2007).

**Goal Orientation Outcomes**

The body of knowledge on goal orientation outcomes is vast, although most of what is currently known grew out of academic studies. However, recent research has proven goal orientation outcomes in organizational settings as well. The discussion that follows will group goal orientation outcomes into attitudes, behaviors, performance, and well-being within the 2x2 achievement goal framework when possible.

**Attitudes.** In general, PGO individuals tend helplessly believe that neither their successes nor their failures are within their control. In one academic study, PGO students attributed failure to lack of ability or believed it was an uncontrollable result of the situation itself, such as the class being too difficult to be successful in. However, the same students attributed success to situational factors as well and luck, but not their own ability or effort (Robins & Pals, 2002).

PGO individuals believe failures are the result of a lack of sufficient ability, but they do not believe achievements and success are ever borne out of ability. They are more likely to feel distressed, ashamed and upset about their performance, even if they are performing as well as LGO individuals (Robins & Pals, 2002). Meta-analytic research also associates academic PGO with higher levels of state anxiety—that is, test anxiety or apprehension during evaluations and exams (Payne et al., 2007).
At work, PGO individuals tend to be less satisfied with their jobs (Burnette & Pollack, 2013; Janssen & Van Yperen, 2004). There may even be a reduced willingness within PGO individuals to share useful information with coworkers. To the PGO individual, divulging this information could give someone else the ability to outperform them (Poortvliet, Janssen, Van Yperen, & Van de Vliert, 2007).

LGO individuals, on the other hand, attribute success to effort. They are more inclined to feel determined, enthusiastic, excited and inspired about their performance. They believe achievement and success are a result of factors within their control, such as hard work and skill development (Robins & Pals, 2002).

In academic settings, LGO is related to greater enjoyment of the educational process, academic engagement, and higher motivation to learn (Aronson et al., 2002; Burnette, Russell, Hoyt, Orvidas, & Widman, 2018). Meta-analytic research associates LGO with the increased ability to challenge the goals one sets for themselves in both education and workplace environments (Payne et al., 2007).

**Behaviors.** Meta-analytic research shows a higher usage of learning strategies for LGO individuals in both organizational and academic contexts (Payne et al., 2007). In one of the first studies to identify an undesirable LGO outcome, learning-avoidance goals positively predicted procrastination (Howell & Buro, 2008).

PGO is also associated with undesirable outcomes. Individuals with a high PGO may go as far as demonstrating interpersonal harm in social situations, even cheating, to get ahead. The focus of PGO is to win, or not to lose, sometimes at any cost (Van Yperen & Orehek, 2013).

However, there are positive outcomes within PGO. In one organizational study, performance-approach orientation successfully predicted proactive behavior, including seeking
feedback. One possible theory to explain this behavior is that performance-approach individuals are inclined to outperform others and proactively soliciting feedback may convey that they care more than colleagues who did not solicit any feedback. Performance may also be acknowledged more directly than it would if feedback was not solicited at all (Porath & Bateman, 2006).

In the same study, LGO also predicted proactive behavior, including feedback-seeking (Porath & Bateman, 2006). High LGO individuals believe that even negative performance feedback is useful, despite any psychological pain it may cause (Trope, Gervey, & Bolger, 2003). They may also be more willing to provide feedback and coaching at work (Heslin, VandeWalle, & Latham, 2006; Levine & Ames, 2006).

Regardless of PGO or LGO, when an individual utilizes an approach orientation and actively works towards a positive outcome (versus working to avoid a negative outcome), they tend to be calmer during evaluation (Van Yperen et al., 2015).

**Performance.** Meta-analytic research has shown that LGO is a stronger predictor of performance than cognitive ability and personality traits (Payne et al., 2007). Individuals who set learning goals have also been shown to experience increases in performance over time, whereas individuals who set performance goals do not (Seijts, Latham, Tasa, & Latham, 2004).

The relationship between academic competence and career success for young professionals is influenced by goal orientation (van Dierendonck & van der Gaast, 2013). LGO in particular fosters an attitude of continuous improvement. This attitude makes it easier to handle mistakes or failures, which are very common and often specific to the early stages of a professional career (van Dierendonck & van der Gaast, 2013).

In academic settings, LGO is often associated with higher learning performance, typically measured by grade point average and enrollment rates (Aronson et al., 2002; Burnette et al.,
Students with high LGO tend to explain their academic performance in terms of internal, controllable factors such as their own effort and studying skills. When faced with failure, these students believe they need to increase their efforts or develop better strategies to perform better. Students with high LGO view success as a result of their hard work, and do not believe luck has a significant impact on their success (Robins & Pals, 2002). LGO has been shown to be positively related to resilience in educational settings as well (Yeager & Dweck, 2012).

Interventions have shown to be most beneficial for underperforming, vulnerable, or at-risk students (Aronson et al., 2002; Burnette et al., 2013; Davis, Burnette, Allison, & Stone, 2011; Paunesku et al., 2015).

In a particularly noteworthy study, LGO, or growth mindset, was proven to reliably predict academic achievement regardless of socioeconomic status (Paunesku et al., 2015; Yeager & Dweck, 2012; Yeager et al., 2016). Students in this orientation outperformed those who did not have an LGO at every possible status. PGO, or fixed mindset, is debilitating when individuals need to overcome significant barriers to succeed (Paunesku et al., 2015; Yeager et al., 2016). Economic deprivation, such as low family income/poverty and general lack of access to resources, can be devastating to academic outcomes. This groundbreaking study proved that LGO may help mitigate the consequences. LGO students achieved similar test scores to PGO students whose families earned over ten times more per year (Claro et al., 2016).

In organizational settings, high LGO correlates with higher levels of performance as individuals in this orientation tend to put extra effort into their work and persist in the wake of obstacles (Dweck, 1986; Hoyt, Burnette, & Innella, 2012; Janssen & Van Yperen, 2004;
VandeWalle, Brown, Cron, & Slocum, 1999). High LGO leaders tend to set more challenging goals than high PGO leaders (Culbertson & Jackson, 2016). LGO is also associated with improved in-role performance, or the required actions of a job that are appraised by the organization, as well as innovative job performance, or the intentional generation of beneficial ideas (Janssen & Van Yperen, 2004). However, PGO is negatively related to in-role job performance and not related to innovative job performance (Janssen & Van Yperen, 2004).

A more recent meta-analysis determined that PGO and LGO may not actually have a direct correlation with achievement unless they are moderated by approach and avoid orientations. Approach goals were shown to have a positive correlation with achievement and avoid goals were shown to have a negative correlation with achievement, regardless of PGO or LGO (Burnette et al., 2013). Similar research has shown that approach goals (regardless of whether they were performance-approach or learning-approach) enhanced task performance, though learning-approach goals led to better performance overall (Van Yperen et al., 2015).

**Well-being.** Goal orientation impacts well-being primarily through self-esteem and stress management, though there are other relevant outcomes as well. In academic settings, PGO has proven to result in a decrease in self-esteem throughout a student’s four years in college. This could be due to the behavioral tendency to give up in the face of challenges, especially considering the threat of failure is constantly present in college (Robins & Pals, 2002). Further, if PGO individuals do not take credit for their successes, they are less likely to benefit from the increased self-esteem that success presumably produces for individuals with contingent self-worth (Robins & Pals, 2002).

In other studies, students who had, or were introduced to, an LGO at the beginning of a school year reported having less social stress over the course of the year and lowered levels of
chronic stress longitudinally (Yeager & Dweck, 2012; Yeager et al., 2014; Yeager, Lee, & Jamieson, 2016). High LGO students showed a 40% decrease in depressive symptoms long-term as well, up to nine months following an intervention (Miu & Yeager, 2015).

Meta-analytic research relates self-esteem positively with LGO and negatively with PGO (Payne et al., 2007). Self-esteem is not typically related to goal orientation when captured at a set point in time (Hong, Chiu, Dweck, Lin, & Wan, 1999). In the workplace, leaders with incremental beliefs (or LGO) about their leadership ability tend to benefit from higher levels of self-esteem when faced with a stereotype threat (Burnette, Pollack, & Hoyt, 2010).

Given the breadth of knowledge on the effects of goal orientation on academic attitudes, behaviors, performance and well-being, surprisingly little is known about these outcomes in organizational contexts. Further, there is some debate surrounding goal orientation performance outcomes regardless of setting. Therefore, there is a definite need to understand how and when goal orientation has successfully been influenced, trained or developed in past academic and/or organizational settings.

**Trainability of Goal Orientation**

It is widely accepted that goal orientation is teachable, and numerous researchers have successfully induced a goal orientation (Aronson et al., 2002; Blackwell, Trzesniewski, & Dweck, 2007; Burnette et al., 2018; Chiu et al., 1997; Dweck, 2000; Paunesku et al., 2015; Seaton, 2018). Similar to what is known about goal orientation outcomes, the vast majority of these interventions have been conducted in academic settings.

In its earliest days, goal orientation was thought to be an individual’s most dispositional (predominant, most natural) trait (Dweck, 1986). In further research, goal orientation was successfully manipulated, resulting in a new understanding that incremental mindset can be
teachable (Dweck, 2000; Dweck & Leggett, 1988). For these reasons, goal orientation is considered to have both trait- and state-like qualities, and is understood as a stable factor that could be situationally influenced (Button et al., 1996).

Successful goal orientation interventions share a theme of delivering a message that the brain (or intelligence/intellectual ability) is malleable “like a muscle” and is able to be developed through hard work and learning strategies (Aronson et al., 2002; Blackwell et al., 2007; Dweck, 2000).

Students are typically trained through the use of persuasive materials espousing a particular goal orientation. For example, they may be given materials to read with a generic message that intelligence can be changed, or they may watch a video where a speaker is sharing this message verbally. The students would then be taught or given tips for success that reiterate the importance of hard work and of exploring and applying new learning strategies to be even more successful (Aronson et al., 2002; Burnette et al., 2018; Paunesku et al., 2015). They are then guided to apply the relevant principles to their own learning, which has a larger effect on their general outlook on life as well (Aronson et al., 2002; Blackwell et al., 2007; Burnette et al., 2018; Davis et al., 2011; Paunesku et al., 2015; Yeager & Dweck, 2012).

Academic goal orientation interventions have been successfully carried out in both in-school/‘live’ settings (Aronson et al., 2002; Blackwell et al., 2007) and online settings (Burnette et al., 2018; Paunesku et al., 2015) as well. These interventions have been successful for students in a wide range of ages, from grade school through college in the United States (Aronson et al., 2002; Blackwell et al., 2007).

In-school interventions are typically carried out over multiple sessions (Aronson et al., 2002; Blackwell et al., 2007). These sessions may be short, sometimes lasting only 30 to 45
minutes, and often involve self-administered reading and writing exercises (Miu & Yeager, 2015; Yeager et al., 2014; Yeager, Lee, & Jamieson, 2016). Online interventions sessions are typically short as well, usually lasting around 45 minutes (Burnette et al., 2018; Paunesku et al., 2015).

Outcomes can be determined after just one or two sessions in some cases, and are typically measured in terms of shift in mindset (via a reliable, valid instrument such as the Achievement Goal Questionnaire (AGQ)), performance (e.g., grades/grade point average, graduation rates, change in attendance), observed behavior (e.g., fewer instances of observed aggressive behavior and conduct problems) (Paunesku et al., 2015; Yeager, Paunesku, Walton, & Dweck, 2013; Yeager, Trzesniewski, & Dweck, 2013).

LGO interventions have proven to be successful in both short- and long-term settings. In one study involving adolescent girls, higher LGO levels were captured immediately following the intervention with significant lasting effects four months later (Burnette et al., 2018). A previous study that successfully induced LGO in adolescent students also showed lasting effects up to nine months post-intervention (Miu & Yeager, 2015).

It is important to note that regardless of design, training programs and learning environments that encourage competition or praise quick or easy success may unintentionally reinforce PGO (Cook & Artino, 2016). Feedback intended to bolster confidence (e.g., “You did well! You must be smart!”) can also encourage PGO as well. Therefore, it is recommended that if an increase in LGO is the intended outcome, the teacher or facilitator should promote confidence by sharing that anyone can learn if they work hard at it and should not strictly boost performance confidence (Cook & Artino, 2016).
Overall, although academic interventions have been successfully carried out among students ranging from middle school to college, there is a distinct lack of knowledge on these interventions and their potential outcomes among the graduate student population. Understanding the effects of goal orientation interventions at the graduate level could be a valuable first step towards understanding the potential impacts of similar interventions on individuals in the workforce.

**Summary of Goal Orientation**

The vast majority of what is known about goal orientation is academic in nature. The critical distinctions between the performance/learning and approach/avoid dimensions, and all the relationships contained within them, were built out of educational psychology. Only recently have researchers started to apply these concepts in organizational settings. Even then, while some literature now exists regarding goal orientation outcomes in the workplace, very little research has been conducted to formally induce an orientation in the same way that has been done academically.

Despite the wealth of knowledge surrounding goal orientation, its many outcomes and its overall trainability among students, there is very little research on structured, formal training programs focusing on an individual's goal orientation in the workplace. Given the relative ease and success of academic goal orientation interventions in short-term, online, self-directed settings, developing a similar intervention that could be used in an organizational context could have a significant return on investment. And, because graduate students have not yet been studied in these contexts either, it is worth considering the option now.
Existing Relationships Between PsyCap and Goal Orientation

PsyCap and goal orientation are connected in several known ways. As this study aims to deepen the understanding of this connection, and to also determine whether a synergistic effect exists between the two constructs, the current known connections must first be examined. This review focuses on the significant known areas of overlap between PsyCap and goal orientation which are a general connection provided by one key study, followed by more indirect, shared connections between the dimensions of goal orientation and PsyCap.

To date, one key study has been published that directly associates goal orientation (LGO) and PsyCap. The study established a positive relationship between LGO and PsyCap in the workplace, particularly noting that high LGO employees are able to utilize their PsyCap to be more creative at work. In addition, LGO was found to significantly predict PsyCap (Huang & Luthans, 2015).

Meta-analytic research supports a relationship between goal orientation and PsyCap through self-efficacy (Payne et al., 2007). High-levels of self-efficacy, one of the four key dimensions within PsyCap, tend to be strongly and positively correlated with LGO, regardless of approach or avoid, and negatively correlated with performance-avoid orientation (Payne et al., 2007). Individuals with high levels of self-efficacy are able to thrive and persevere in the face of challenges, which also describes a hallmark characteristic of LGO (Avey et al., 2010; Cook & Artino, 2016).

In examining outcomes in early stages of academic and professional careers, both goal orientation and PsyCap have proven to determine success though efficacy as well. In young professionals, LGO has proven to be more beneficial for early career success (van Dierendonck & van der Gaast, 2013). In first-year college students, self-efficacy has proven to be a strong
predictor of academic success (Chemers et al., 2001). In both contexts, the connection between LGO and self-efficacy proves success in the earliest stages of new, major performance settings.

When facing failure, high LGO individuals tend to experience lower levels of anxiety, an outcome also linked to PsyCap’s optimism (Luthans et al., 2007; Plaks & Stecher, 2007). To take this a step further, LGO individuals tend to view challenges in an optimistic light, as they welcome any opportunity to increase their own learning (Plaks & Stecher, 2007). They are inclined to seek out new and untested approaches to these challenges, even if they are likely to fail (VandeWalle, 2003).

Most significantly, GO also shares many of the same outcomes as PsyCap in organizations. Strong LGO has been proven to boost job performance as people in this orientation put extra effort into their work and persist in the wake of obstacles (Dweck, 1986; Janssen & Van Yperen, 2004; VandeWalle et al., 1999). This overlaps significantly with the PsyCap construct of hope, as agency is what enables individuals to put in the extra effort, and resilience is what enables people to persevere and recover from setbacks (Luthans et al., 2010).

Summary of Relationships

Several connections between goal orientation and PsyCap currently exist. Outcomes for both seem to overlap to some degree across all attitudes, behaviors, performance and well-being, especially in the earlier stages of a new academic or professional career. In the face of failure and setbacks, the PsyCap dimension of optimism allows LGO individuals to persist and continue learning. On the broadest level, high-LGO individuals have subconsciously relied on their PsyCap to remain positive (optimistic and hopeful) towards uncertainties and persist in their jobs (Huang & Luthans, 2015).
Summary

Individuals high in hope, self-efficacy, resilience, and optimism experience a multitude of benefits regardless of academic or organizational setting. These dimensions, when measured synchronously, form the unified, trainable construct of PsyCap. Creating an intervention that acknowledges each of the four constructs within PsyCap results in synergistic benefits to the individual both academically and professionally, and in the workplace, to the organization as a whole as well.

The dimensions of goal orientation, LGO and PGO, share many of the same organizational outcomes as PsyCap and have proven to be trainable as well. But because goal orientation is rooted in educational psychology, most of what is known regarding successful interventions and specific training outcomes is academic. And, unlike PsyCap, negative outcomes exist – particularly in the avoidance domain of both learning and performance goal orientation.

Both goal orientation and PsyCap are often tied to similar outcomes (attitudes, behaviors, performance, well-being, etc.) but there is a significant opportunity to identify any concrete and measurable associations between the two on their own. Despite the breadth of research and knowledge in each of these areas, to date there are no known studies that have resulted in a synergistic effect between PsyCap and goal orientation in either organizational or academic settings. In addition, no published research currently exists that documents a training intervention concurrently focusing on both constructs. Finally, to date, no known studies measuring goal orientation interventions among graduate students have been published.

The present study aims to close this gap by examining the relationship between PsyCap and goal orientation over time. It also aims to examine whether or not a training intervention of
both PsyCap and goal orientation create a synergistic effect of increasing academic engagement and performance in graduate students.
Chapter 3: Research Design and Method

**Research Questions and Hypotheses**

This study exists to further understand the relationship that exists between psychological capital (PsyCap) and goal orientation among graduate students. This study seeks to answer three main research questions. First, the aim of this research is to test whether PsyCap or GO training has an impact on student outcomes at the end of the semester. Second, does PsyCap or GO training have a stronger impact on student outcomes? Third, does the combination of these training programs have a stronger impact on student outcomes? Specific hypotheses are as follows:

- **H1**: Participants will experience an increase in PsyCap from Time 1 to Time 2, indicating that the training was effective in increasing PsyCap.

- **H2**: Participants will experience an increase in LGO from Time 1 to Time 2, indicating that the training was effective in increasing LGO.

- **H3**: At Time 2, participants with higher PsyCap scores will have higher academic engagement scores.

- **H4**: At Time 2, participants with higher LGO scores will have higher academic engagement scores.

- **H5**: Participants with higher levels of PsyCap at Time 1 will experience a higher increase in LGO at Time 2.

**Research Design**

This study will utilize archival data. The data utilized consists of an experimental longitudinal design to examine the impact of PsyCap training, GO training and the combination of both trainings on levels of academic PsyCap, GO, and academic engagement. Given that
PsyCap trainings have been proven to increase PsyCap and performance outcomes, the specific aim of the initial study is to test the longitudinal impact of a PsyCap training combined with other positive psychology interventions. This study looks specifically at the potential interaction between PsyCap and GO in an academic training environment, and the impact of each on academic engagement levels following the conclusion of a voluntary positive psychology training course.

Participants

At the time data was collected, participants must have been enrolled in one of the masters or doctoral programs at The Chicago School of Professional Psychology, at either the Chicago campus or the online campus.

Data was collected for a total of 110 participants at the start of the 8-week positive psychology training class. Of the initial 110 participants, 82 enrolled in the 8-week positive psychology training class. The remaining 28 participants belonged to the control group. Within the training group, 57 participants were present for the GO/growth mindset module. The training class was offered in live/in-person and online formats. A total of 9 participants completed the training class online, all of whom were present during the GO/growth mindset module. Table 2 provides Time 1 participants’ demographic data including gender, ethnicity, campus and degree program affiliation, as well as regular class format (blended/executive, on ground, or online).
Table 2

**Study Participant Demographics: Pre-Training (Time 1)**

<table>
<thead>
<tr>
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<th>Total</th>
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<th>Control</th>
</tr>
</thead>
<tbody>
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<td></td>
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<td>32</td>
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<td>Clinical Psychology</td>
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<td>Counseling Psychology</td>
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<td>2.7%</td>
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<td>International Psychology</td>
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<tr>
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<td>5.5%</td>
<td>6</td>
</tr>
</tbody>
</table>

Post-training data was collected for 43 participants—30 in the training group (with 28 having attended the GO/growth mindset module) and 13 in the control group. Participant
responses were coded into Time 1 and Time 2 and then averaged for each variable. Given the nature of this archival study, all identifying information was removed from participant data prior to analysis.

**Procedures**

This study uses archival data collected from an experimental, longitudinal design to examine the impact of PsyCap training, GO training, and the combination of both on academic PsyCap levels, GO levels, and academic engagement levels. Data was collected before the start of, and following the conclusion of, a positive psychology training class. The survey deployed contained the same items at Time 1 (pre-training session) and at Time 2 (post-training session). Both the training group and control group received the same survey, at the same time.

The positive psychology training class occurred over eight voluntary, 1-hour sessions in Fall 2018. The class schedule and offered topics for each session are provided in Appendix A.

**Instrumentation**

**Psychological Capital Measure**

The Academic PsyCap questionnaire (PCQ-A) consists of 24 items and measures a student’s levels of hope, self-efficacy, resilience and optimism related to school. Responses are rated on a 6-point Likert-type scale (1 = strongly disagree; 6 = strongly agree) with higher scores representing greater levels of PsyCap (Cronbach’s α = .89 to .93; Luthans, et al., 2012, 2014). Reliabilities for the scale as utilized in this specific study, as well as all other scales, is discussed in Chapter 4: Results.

**Goal Orientation Measure**

The Achievement Goal Questionnaire (AGQ) contains 12 items, three items representing each achievement goal orientation: mastery approach, mastery-avoidance, performance-
approach, and performance avoidance. The version using items referencing attitudes toward classes this semester will be used. A 7-point Likert-type scale is used here as well (1 = not at all true of me; 7 = very true of me) and reliabilities of each scale are all greater than .70 (Elliot & McGregor, 2001).

**Engagement Measure**

The Utrecht Work Engagement Scale – Student (UWES-S) is 14 items and assesses student engagement including vigor, absorption, and dedication one displays toward one’s studies. All items are scored on a 7-point frequency rating scale ranging from 0 (never) to 6 (always) and higher scores indicate higher levels of engagement (Cronbach’s α’s range above .80; Schaufeli, Martinez, Pinto, Salanova, & Bakker, 2002).

**Summary**

This study serves to explore the relationship between PsyCap and goal orientation as they are trained over time. Each construct’s data will be analyzed individually as a standalone, independent variable, and then collectively as an interconnected set of training outcomes.

Graduate students at The Chicago School of Professional Psychology, attending both the on-ground Chicago campus and the online campus, were invited to participate in the training. The study itself was conducted in eight, one-hour sessions throughout the Fall 2018 semester. Results will be analyzed and discussed within the scope of this study and with implications for future research.
Chapter 4: Findings

Introduction

This chapter reviews the results of the data analysis, addressing the hypotheses of the study. Data was analyzed through various correlation analyses as well as a mixed method ANOVA, providing an understanding of the differences between two independent groups (the control group and the group that participated in training), while subjecting participants to repeated measures. One factor examined at between-subject variables, and the other explored within-subject variables, to test the study hypotheses.

Descriptive statistics and correlation analyses of the study are provided first, followed by the findings as they relate to each of the study’s hypotheses. Finally, a summary of the findings is provided in conclusion.

Reliability Analysis

To determine the internal consistency of the items in the PsyCap, GO and Engagement instruments used in this study, a Cronbach’s Alpha reliability analysis was conducted. Acceptable inter-item reliability is achieved at coefficients of .70 or higher (George & Mallery, 2016). Results in Table 3 show that all instruments demonstrated good reliability.

Table 3

<table>
<thead>
<tr>
<th>Construct</th>
<th>Instrument</th>
<th>Number of Items</th>
<th>Cronbach's Alpha</th>
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</thead>
<tbody>
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<td>Psychological capital</td>
<td>PCQ</td>
<td>24</td>
<td>.93</td>
</tr>
<tr>
<td>Goal orientation</td>
<td>AGQ</td>
<td>12</td>
<td>.71</td>
</tr>
<tr>
<td>Academic engagement</td>
<td>UWES-S</td>
<td>14</td>
<td>.92</td>
</tr>
</tbody>
</table>
Descriptive Statistics

Post-training data was collected for 43 participants. Of this group, 30 completed the positive psychology training course (28 of whom were present for the GO/growth mindset module) and 13 in the control group. Table 4 provides demographic data for Time 2 participants. Demographics remained consistent between participant groups at Time 1 (shown in Table 2) and Time 2 (in Table 4, below).

Table 4

Study Participant Demographics: Post-Training (Time 2)

<table>
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</thead>
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<td></td>
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<td>n</td>
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<tr>
<td>Gender</td>
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<tr>
<td>Female</td>
<td>32</td>
<td>74.4%</td>
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<td>Male</td>
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<td>23.3%</td>
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</tr>
<tr>
<td>Non-binary/third</td>
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<td>Ethnicity</td>
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<td>9.3%</td>
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<td>On ground</td>
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<td>79.1%</td>
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</tr>
<tr>
<td>Online</td>
<td>1</td>
<td>2.3%</td>
<td>1</td>
</tr>
</tbody>
</table>
Table 4 provides descriptive statistics for the study variables during the pre- and post-tests. All information shown is based on information given from each individual and/or their individual score on each instrument. Skewness and kurtosis are slight for psychological capital but none appeared here or in any other variables of the final group at Time 2.

Table 5

Descriptive Statistics for Study Variables: All Participants

<table>
<thead>
<tr>
<th>Time</th>
<th>Psychological capital</th>
<th>M</th>
<th>SD</th>
<th>N</th>
<th>Skewness</th>
<th>Kurtosis</th>
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</thead>
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<tr>
<td>Time 1</td>
<td>Learning goal orientation</td>
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<td>0.92</td>
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<tr>
<td></td>
<td>Academic engagement</td>
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<td></td>
<td>Learning goal orientation</td>
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<td>-0.83</td>
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</table>

Correlations

A correlation analysis was conducted to identify any interesting relationships between study variables at Time 2 within the training group, specifically participants who attended the GO/growth mindset module (n = 30). Results are provided in Table 6.

Table 6

Correlation Matrix for Study Variables

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<th></th>
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<td>LGO</td>
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<td>.49**</td>
<td>-.22</td>
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<tr>
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<td>-1.6</td>
<td>.65**</td>
<td>.13</td>
<td>-.34*</td>
<td></td>
<td></td>
<td>.53**</td>
<td>.03</td>
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<tr>
<td>AE</td>
<td>.07</td>
<td>.29</td>
<td>.42**</td>
<td>.00</td>
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<tr>
<td>Time 2</td>
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<tr>
<td>PsyCap</td>
<td>-.08</td>
<td>-.19</td>
<td>.49**</td>
<td>-.22</td>
<td>.26</td>
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<tr>
<td>LGO</td>
<td>.07</td>
<td>.28</td>
<td>-1.6</td>
<td>.65**</td>
<td>.13</td>
<td>-.34*</td>
<td></td>
<td></td>
<td>.53**</td>
<td>.03</td>
<td></td>
</tr>
<tr>
<td>AE</td>
<td>-.01</td>
<td>.15</td>
<td>.51**</td>
<td>-.01</td>
<td>.77**</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Note. N = 30. * indicates p < .05; ** indicates p < .01.
For individuals who participated in the GO module, PsyCap and academic engagement (AE) appeared to be related positively at both Time 1 ($r = .42$) and Time 2 ($r = .53$). Contrary to expected outcomes, PsyCap was negatively related to LGO and time 2 ($r = -.34$).

This preliminary analysis demonstrates a surprising negative relationship between PsyCap and LGO among individuals who were present for the GO/growth mindset module in the positive psychology training class.

**Analysis of Hypotheses**

Multivariate tests were conducted to begin analyzing the data. Given the small sample sizes at time 2, the results lacked statistical power. However, Levene’s tests were not significant. This indicates approximately equal variance between the groups; an important finding given the imbalance between training ($n = 30$) and control ($n = 13$) groups at time 2. Further, independent samples t-tests were conducted to compare training and control groups on time 2 measures. No significant differences were found.

**Hypothesis 1: Participants will experience an increase in PsyCap from Time 1 to Time 2, indicating that the training was effective in increasing PsyCap.** To test hypothesis 1, a paired sample t-test was conducted, holding training and control groups separate. Results are shown in Table 7 and Figure 1.

**Table 7**

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Time 1</th>
<th></th>
<th>Time 2</th>
<th></th>
<th>95% CI Lower Bound</th>
<th>95% CI Upper Bound</th>
<th>r</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td></td>
<td>M</td>
<td>SD</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Training Group</td>
<td>4.40</td>
<td>.62</td>
<td></td>
<td>4.75</td>
<td>.55</td>
<td>-.53</td>
<td>-.15</td>
<td>.62</td>
<td>29</td>
<td>.001</td>
</tr>
<tr>
<td>Control Group</td>
<td>4.56</td>
<td>.54</td>
<td></td>
<td>4.61</td>
<td>.67</td>
<td>-.50</td>
<td>.40</td>
<td>.28</td>
<td>12</td>
<td>.81</td>
</tr>
</tbody>
</table>
The data show a significant increase in PsyCap for the training group from Time 1 to Time 2, \( t(29) = 3.64, p < .01 \). This group increased their PsyCap score from Time 1 (\( M = 4.40, SD = .62 \)) to Time 2 (\( M = 4.75, SD = .55 \)). The control group did not differ significantly in PsyCap levels between Time 1 (\( M = 4.56, SD = .54 \)) and Time 2 (\( M = 4.61, SD = .67 \)); \( t(12) = .24, p = .81 \). These results suggest that the training was effective in increasing PsyCap. Therefore, hypothesis 1 is supported.

**Hypothesis 2: Participants will experience an increase in LGO from Time 1 to Time 2, indicating that the training was effective in increasing LGO.** To test hypothesis 2, another paired sample t-test was conducted, holding training and control groups separate. Table 8 and Figure 2 provide these results.
Table 8

Descriptive Statistics and T-Test results: LGO

<table>
<thead>
<tr>
<th>Outcome</th>
<th>M</th>
<th>SD</th>
<th>M</th>
<th>SD</th>
<th>n</th>
<th>95% CI Lower Bound</th>
<th>95% CI Upper Bound</th>
<th>r</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training Group</td>
<td>5.61</td>
<td>.94</td>
<td>5.42</td>
<td>.90</td>
<td>30</td>
<td>-.10</td>
<td>.49</td>
<td>.63</td>
<td>1.33</td>
<td>29</td>
<td>.20</td>
</tr>
<tr>
<td>Control Group</td>
<td>4.97</td>
<td>.94</td>
<td>5.18</td>
<td>1.16</td>
<td>13</td>
<td>-.71</td>
<td>.30</td>
<td>.70</td>
<td>.88</td>
<td>12</td>
<td>.40</td>
</tr>
</tbody>
</table>

Figure 1. LGO change per group.

The training group did not experience a significant difference in LGO scores between time 1 ($M = 5.40, SD = 1.06$) and time 2 ($M = 5.19, SD = 1.03$); $t(29) = 1.28, p = .21$. The control group did not experience a significant difference in LGO scores between time 1 ($M = 4.79, SD = 1.18$) and time 2 ($M = 4.97, SD = 1.34$) either; $t(12) = .71, p = .49$. These results suggest that the training was not effective in increasing LGO. Therefore, hypothesis 2 is not supported.
Hypothesis 3: At Time 2, those with higher PsyCap scores will have higher academic engagement scores. To understand the degree to which PsyCap and LGO were each related to academic engagement within the training group at time 2, a multiple regression was conducted. Academic engagement was analyzed as the dependent variable, and PsyCap and LGO were the independent variables. Table 8 provides these results.

The model of PC and LGO predicting AE was significant, $R^2 = .60$, $F(2, 27) = 3.70$, $p < .001$. These two variables accounted for 60% of the variance of academic engagement.

PsyCap was a significant predictor of engagement for individuals in the training group, $\beta = .81$, $t(27) = 4.82$, $p < .001$. Higher PC led to higher levels of academic engagement. Therefore, hypothesis 3 is supported.

Table 9
Regression Predicting Academic Engagement

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE (B)</th>
<th>$\beta$</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PsyCap</td>
<td>1.29</td>
<td>.27</td>
<td>.81</td>
<td>4.82</td>
<td>.000</td>
</tr>
<tr>
<td>LGO</td>
<td>.14</td>
<td>.16</td>
<td>.14</td>
<td>.86</td>
<td>.40</td>
</tr>
</tbody>
</table>

Note. $R^2 = .61$, $F(2, 27) = 3.70$, $p < .001$.

Hypothesis 4: At Time 2, those with higher LGO scores will have higher academic engagement scores. Mastery approach was not found to have a significant relationship with academic engagement at time 2, based on the regression (see Table 9). Therefore, hypothesis 4 was not supported.

Hypothesis 5: Participants with higher levels of PsyCap at Time 1 will experience a higher increase in LGO at Time 2. The preliminary correlation analyses (provided in Table 6, above) were reviewed to understand the relationship between initial PsyCap levels and post-training LGO levels, to address hypothesis 5.
Contrary to expected outcomes, Time 1 PsyCap levels appeared to have a negative relationship with LGO levels at Time 2. The relationship was not significant \( r = -.16, p > .05 \). Therefore, hypothesis 5 is not supported.

**Supplementary Analyses**

**LGO Sub-Scale Analysis**

Although the hypotheses involving LGO above were not supported through this study, the AGQ measures both valences \( \text{approach and avoid} \) within LGO and PGO. To achieve full understanding of the effects of the positive psychology training course on LGO levels, both learning-approach and learning-avoid sub-scales were examined.

**Learning-Approach.** To understand whether learning-approach significantly changed in either group, an additional paired sample t-test was conducted, holding training and control groups separate. Results are shown in Table 10 and Figure 2.

Table 10

*Descriptive Statistics and T-Test Results: Learning-Approach*

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Time 1</th>
<th>Time 2</th>
<th>95% CI Lower Bound</th>
<th>95% CI Upper Bound</th>
<th>( t )</th>
<th>( df )</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td></td>
<td></td>
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<tr>
<td>Training Group</td>
<td>6.22</td>
<td>.78</td>
<td>6.16</td>
<td>.76</td>
<td>-.19</td>
<td>.32</td>
<td>.62</td>
</tr>
<tr>
<td></td>
<td>5.72</td>
<td>.64</td>
<td>5.95</td>
<td>.86</td>
<td>-.73</td>
<td>.27</td>
<td>.41</td>
</tr>
</tbody>
</table>
Results show that the changes to learning-approach were not significant in either the training or control group. Most interestingly, the learning-approach orientation decreased within the training group while it increased within the control group.

Learning-Avoid. An identical test was conducted to determine if the changes to learning-avoid orientation were significant in either group as well. Results are shown in Table 11 and Figure 3.

Table 11

Descriptive Statistics and T-Test Results: Learning-Avoid

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Time 1 M</th>
<th>Time 1 SD</th>
<th>Time 2 M</th>
<th>Time 2 SD</th>
<th>n</th>
<th>95% CI Lower Bound</th>
<th>95% CI Upper Bound</th>
<th>r</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training Group</td>
<td>5.01</td>
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<td>4.67</td>
<td>1.57</td>
<td>30</td>
<td>-.15</td>
<td>.79</td>
<td>.67</td>
<td>1.40</td>
<td>29</td>
<td>.17</td>
</tr>
<tr>
<td>Control Group</td>
<td>4.23</td>
<td>1.56</td>
<td>4.41</td>
<td>1.72</td>
<td>13</td>
<td>-.99</td>
<td>.63</td>
<td>.67</td>
<td>.48</td>
<td>12</td>
<td>.64</td>
</tr>
</tbody>
</table>
Results show that changes to learning-avoid orientation were not significant within either the training or control groups, similar to learning-approach. However, learning-avoid orientation decreased within the training group between Time 1 ($M = 5.01, SD = 1.53$), and Time 2 ($M = 4.67, SD = 1.57$), which is an unexpected and promising finding of this study.

**Correlation Analysis – All Participants**

Because this is the first study of its kind to explore the potential relationships between PsyCap and GO, it is worth taking a deeper look at the dimensions and sub-dimensions that make up each construct. Understanding the point-in-time relationships between these constructs, prior to any intervention, could be enlightening as well. For that reason, all participants ($N = 110$) were analyzed for the first supplementary correlation analysis. Table 12 provides these results.
Table 12

Supplementary Correlation Analysis: All Scales and Sub-Scales, Time 1

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<td>PsyCap (PC)</td>
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<td>.88**</td>
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<td>Hope (PC-H)</td>
<td>.88**</td>
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<tr>
<td>Efficacy (PC-E)</td>
<td>.88**</td>
<td>.75**</td>
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<tr>
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<td>.61**</td>
<td>.60**</td>
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<tr>
<td>Optimism (PC-O)</td>
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<td>.67**</td>
<td>.64**</td>
<td>.64**</td>
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</tr>
<tr>
<td>Learning-Approach (L-Ap)</td>
<td>.27**</td>
<td>.24*</td>
<td>.29**</td>
<td>.16</td>
<td>.19</td>
<td>.46**</td>
<td>1</td>
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<tr>
<td>Learning-Avoid (L-Av)</td>
<td>-.35**</td>
<td>-.20*</td>
<td>-.42**</td>
<td>-.16</td>
<td>-.36**</td>
<td>.92**</td>
<td>.07</td>
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<tr>
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<td>.20*</td>
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<td>.24*</td>
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<td>.75**</td>
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<tr>
<td>Performance-Avoid (P-Av)</td>
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<td>-.06</td>
<td>-.05</td>
<td>-.20*</td>
<td>-.32**</td>
<td>.25*</td>
<td>-.01</td>
<td>.28**</td>
<td>.71**</td>
<td>.06</td>
<td>.06</td>
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<tr>
<td>AE</td>
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<tr>
<td></td>
<td>.49**</td>
<td>.53**</td>
<td>.38**</td>
<td>.27**</td>
<td>.43**</td>
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<td>.27**</td>
<td>-.22</td>
<td>.05</td>
<td>.17</td>
<td>-.11</td>
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</table>

Note. N = 110. * indicates p < .05; ** indicates p < .01.

Results from this analysis indicate several interesting relationships between PC and LGO as they may exist prior to an intervention’s influence, etc. For example, although LGO was still negatively related to PC \((r = -.20, p < .05)\), learning-approach had a strong positive relationship with PC at the construct level \((r = .27, p < .01)\) as well as the sub-dimensions of hope \((r = .24, p < .05)\) and efficacy \((r = .29, p < .01)\). The negative trend continued between learning-avoid and PC \((r = -.35, p < .01)\) and each of its sub-dimensions, though no significant correlation was found with resilience.

There is some interest in examining PGO as well, though relationships appear to be less significant in some areas. Performance-approach appeared to be positively related to hope \((r = .24, p < .05)\), and efficacy \((r = .20, p < .05)\), while performance-avoid was negatively linked with resilience \((r = -.20, p < .05)\) and most strongly and negatively associated with optimism \((r = -.32, p < .01)\).

Regarding academic engagement, results seemed to be somewhat consistent across the LGO sub-dimensions. Learning-approach was strongly and positively related to academic
engagement for all participants at time 1 \((r = .27, p < .01)\), while learning-avoid was negatively
related to engagement, though to a lesser extent \((r = -.22, p < .05)\).

Relationships stayed somewhat consistent for all participants (training and control groups
combined; \(N = 43\)) in time 2, illustrated in Table 13.

Table 13

*Supplementary Correlation Analysis: All Scales & Sub-Scales, Time 2*

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<tr>
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<td></td>
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<tr>
<td>Efficacy (PC-E)</td>
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<td>Resilience (PC-R)</td>
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<td>.80**</td>
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<td>Optimism (PC-O)</td>
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<td>-.44**</td>
<td>-.27</td>
<td>-.30</td>
<td>.92**</td>
<td>.27</td>
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<tr>
<td>PGO</td>
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<td></td>
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<tr>
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<td>.08</td>
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<td>.07</td>
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<tr>
<td>Performance-Avoid (P-Av)</td>
<td>-.16</td>
<td>-.19</td>
<td>-.21</td>
<td>-.15</td>
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<td>.08</td>
<td>-.10</td>
<td>.15</td>
<td>.77**</td>
<td>.01</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>AE</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>.53**</td>
<td>.55**</td>
<td>.51**</td>
<td>.39*</td>
<td>.31*</td>
<td>.03</td>
<td>.32*</td>
<td>-.12</td>
<td>-.34*</td>
<td>.02</td>
<td>-.47**</td>
<td>1</td>
</tr>
</tbody>
</table>

*Note. \(N = 43\). * indicates \(p < .05\); ** indicates \(p < .01\).*

Interestingly, new and significant relationships appeared between academic engagement
and PGO \((r = -.34, p < .01)\) and performance-avoid \((r = -.47, p < .01)\) following the training.

However, many of the Time 1 relationships between PC and LGO as well as within the PGO
dimensions seem to have weakened at time 2, after the training.

**Correlation Analysis – GO Module Participants**

One final supplemental correlation analysis was run among individuals who (a) submitted
post-training data, and (b) attended the GO module. A correlation was done on all scales and
sub-scales for this group at both time 1 \((n = 30)\) and time 2 \((n = 28)\). This was primarily done
with the intention of achieving a deeper understanding of the changes that may have occurred
within the training specifically for this group. Table 14 provides results for this group at time 1.
Table 14

Supplementary Correlation Analysis: All Scales & Sub-Scales, GO Module Participants, Time 1

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Note. N = 30. * indicates p < .05; ** indicates p < .01.

Two interesting relationships present themselves in Table 14. Again, learning-avoid was negatively related to PC (r = -.37, p < .05), as well as hope (r = -.34, p < .05) and efficacy (r = -.46, p < .05). However, the relationship between PsyCap and LGO, while negative, is not significant (r = -.31, p > .05). Significance is only found in the relationships between learning-avoid and PsyCap.

To further understand how these relationships may have changed as a result of the positive psychology training course, a final correlation analysis was conducted among scales and sub-scales within this group at Time 2 (n = 28) as well. Table 15 provides these results.
Table 15

Supplementary Correlation Analysis: All Scales & Sub-Scales, GO Module Participants, Time 2

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Note. N = 28. * indicates p < .05; ** indicates p < .01.

At time 2, the relationship between LGO and PsyCap becomes significant, although it remains negative, with a large effect (r = -.47, p < .01). The relationship between performance-avoid and engagement has also become significant as well (r = -.43, p < .05).

Summary

In conclusion, results show that the positive psychology training course was successful in increasing participants’ levels of PsyCap. PsyCap was also found to be a significant predictor of academic engagement. The training was however not successful in increasing participants’ levels of LGO. In fact, LGO levels decreased for participants throughout this training. However, supplementary analyses revealed several promising findings of this study. Participants appeared to become less learning-avoid oriented after participating in this course. Several significant correlations between the sub-scales of PsyCap and GO, as well as the correlations between these dimensions and academic engagement, present a strong case for further research in the future.
Chapter 5: Discussion

Introduction

As psychological capital and mindset continue to gain popularity in achievement settings like academia and the workplace, understanding how mindset impacts outcomes continues to rise in importance as well. The discussion that follows is the first of its kind. To date, no known study has explored psychological capital and goal orientation to this extent. This study is also the first to examine goal orientation in graduate students at all.

Discussion of Results

The current study first aimed to further understand the relationship between PsyCap and GO among graduate students. The second goal was to determine whether PsyCap or GO training had an impact on student outcomes at the end of the semester. Third, this study aimed to determine whether PsyCap or GO had a stronger impact on student outcomes after a semester of training involving both PsyCap and GO materials. Finally, the study attempted to identify whether an interaction existed between pre-test PsyCap and post-test GO.

The training intervention was found to successfully influence an increase in PsyCap among participants. Further, in agreement with existing literature, PsyCap was found to significantly predict students’ levels of academic engagement. Higher levels of PsyCap were found to be significantly predictive of academic engagement levels at Time 2, specifically within the training group.

These results demonstrate that students with higher PsyCap scores tend to also have higher levels of academic engagement, at least following a training intervention involving PsyCap concepts. This is an important finding, as it substantiates existing literature while adding to the body of knowledge on academic outcomes, particularly at the graduate level.
However, contrary to expected outcomes, none of the hypotheses involving GO/LGO were supported in this study. Perhaps most interestingly, time 2 results indicate that LGO levels actually decreased for individuals who participated in the training. This decline was observed in both the learning-approach and learning-avoid subscales as well. These outcomes, however, were not found to be significant.

These findings present a strong case for deeper examination of these topics in a training setting, as existing knowledge indicates that both PsyCap and LGO are able to be developed through training in individuals. PsyCap increased significantly, yet participants’ LGO levels actually declined, in opposition of one of the positive psychology training course’s intended outcomes.

At Time 2, the relationship between LGO and PC was significant, but not in the way it was expected to be. A very unexpected finding of this study is that the relationship between PsyCap and LGO may indeed be negative. However, this could be due to the negative relationship between learning-avoid orientation and PsyCap. Supplemental analyses reveal a decrease in learning-avoid orientation from Time 1 ($M = 5.01, SD = 1.53$) to Time 2 ($M = 4.67, SD = 1.57$) within the training group specifically.

It is possible that training participants’ increase in PC was related to this decrease in learning-avoid orientation as a result of the training. Some of the outcomes of learning-avoid orientation include procrastination and perfectionism (Elliot & Hulleman, 2017; Howell & Buro, 2008). The positive psychology training may have addressed these maladaptive habits, even indirectly, which could have resulted in lower learning-avoid levels at the end of the class. This also indicates that individuals with higher levels of PsyCap are less likely to set learning-
avoidant goals. In other words, individuals with higher PsyCap are not as likely to work to avoid a negative outcome in learning, which is another promising finding of this study.

Finally, contrary to expected outcomes, the relationship between PsyCap at Time 1 and LGO at Time 2 lacked significance as well. While PsyCap appeared to have a significant relationship with academic engagement, it did not seem to determine participants’ LGO throughout the course of the training. In other words, there is no evidence to support the notion that individuals with higher levels of PsyCap may be able to strengthen their LGO at a faster rate, even through training.

Despite this outcome, an extensive correlation analysis revealed several interesting relationships within the dimensions and sub-dimensions of both PsyCap and GO as points in time. In the current study, PsyCap was significantly correlated with learning-approach orientation prior to the training intervention. PsyCap was also significantly, but negatively related to learning-avoid orientation, suggesting that PsyCap is not related to avoidant goal-setting. In other words, individuals with higher levels of PsyCap are less likely to set goals in which the objective is to avoid a negative outcome.

To supplement this notion, there was a significant and positive correlation between PsyCap and learning-approach orientation at Time 1, within the combined (training and control) group, which also had the largest sample size within the study by far. Unfortunately, these results did not carry through to Time 2. Implications of and possible reasons behind this finding are explored further in the discussion of this study’s possible limitations.

The results of the supplementary correlation analyses indicate quite a few interesting relationships between PsyCap and GO sub-dimensions as well. Although the findings in the current study are not in complete alignment with existing literature on both PsyCap and GO (i.e.,
PsyCap being negatively correlated with LGO, which combines learning-approach and learning-avoid sub-dimensions), the fact remains that very few studies have been conducted to understand the possible interconnectedness of these dimensions and sub-dimensions. It is very possible that the weight of the -approach and -avoid valences, under both learning and performance goal orientations, is not yet fully understood. This presents an interesting case for future research.

The first major finding of this study is that while the training intervention was not successful in increasing LGO, it did result in a decrease of learning-avoid orientation for participants. The second major finding of this study is that PC and LGO may be negatively linked, which is surprising and definitely warrants further research. The correlational findings are important as well, as they indicate that some interaction may exist between psychological capital and goal orientation subscales as points in time.

This is promising for the field, as this study is the first to attempt to determine any sort of interaction between these two constructs to this extent. Based on these findings, it appears that several layers of interaction are present, presenting a strong case for future research.

**Study Limitations**

Unfortunately, some limitations may have impeded this study’s ability to clearly illustrate the relationships between psychological capital, goal orientation, academic engagement, and the sub-dimensions contained within these constructs.

The first limitation concerns the small sample size of this study, particularly at Time 2. The training group, which consisted of 30 people at Time 2, was evaluated against the control group, which had only 13 participants at the same time. The small sample size could possibly be attributed to timing of the second round of surveys. The post-training survey was deployed shortly after the conclusion of the training class, towards the end of the semester. At this point in
the semester, students are often less responsive as they are working on final projects and exams, or otherwise distracted by things like family, vacation and holiday travel.

Another limitation in the study was the weakness of relationships at Time 2, particularly within learning goal orientation and its sub-dimensions. This unique limitation could potentially stem from the design of the positive psychology training class. Students who completed the training intervention participated in only one week of goal orientation/“growth mindset” training, while psychological capital-related concepts were discussed over the course of four weeks, with one week dedicated to each sub-dimension. A basic outline of training content by week is provided in Appendix A.

Timing and recency of the material provided throughout the positive psychology training course could have also been an issue in measuring these constructs. The goal orientation/growth mindset module was very early in the training class (week 2), and only consisted of one module within the training. In contrast, the psychological capital material was covered over four modules (weeks 4-7). Not only was this simply more time devoted to this construct, but these weeks were much closer to when the training concluded, and the post-training survey was deployed. It is possible that the recency of these topics provided some skew in Time 2 results.

Another limitation in this study’s measurement involves a simple data entry error in the AGQ survey items. (Despite this error, results showed the AGQ’s reliability was still above the acceptable limit for use in this study.) The version of the AGQ utilized in the primary study from which this archival data was derived is provided in Figure 3 in the appendix. Of note, eleven of the twelve survey items pertain to a student’s thoughts and feelings regarding “this semester” while one item pertains to the same thoughts and feelings regarding “this class”. In all, it is unclear whether the lack of strength in Time 2 results can be attributed to this error. However,
removing any errors from the AGQ in future iterations could result in stronger results at both points in time.

The final limitation of this study concerns the skew of the learning goal orientation at Time 1 for all participants. On a 7-point scale, the average level of learning orientation among all participants was very high at the training’s onset ($M = 5.39, SD = 0.92, N = 102$). Essentially, the students who participated in this study arrived already very high in learning goal orientation. This makes sense, as the training was voluntary and free of charge, and thus would naturally appeal to individuals who are interested in learning for the sheer sake of it. However, when participants begin the intervention with such high levels of learning goal orientation, this presents a unique challenge in capturing the effectiveness of the intervention’s attempts at increasing those levels even further.

**Practice Implications**

Results of this study show that psychological capital can indeed be increased through training, and that it is also an important predictor of academic engagement. Both of these findings support existing knowledge. The findings of this study suggest that students with higher PsyCap levels are more likely to be academically engaged than those who have lower PsyCap levels. Previous research has shown that PsyCap is trainable, and this was found to be true in this study as well.

This study also supplements the ongoing conversation surrounding growth mindset/learning orientation in academia and in the workplace as well. Although the interaction between PsyCap and LGO in training participants appeared to be negative, the implications of this may not be. It is critical to further explore the impact of the *approach* and *avoid* valences on
the larger orientation (performance or approach) to determine whether they should be measured at this level.

Although an interaction was not able to be identified between PsyCap and LGO in training participants, more information is known regarding goal orientation in graduate students. The high average of participants’ LGO at the onset of the training is an interesting finding, as it demonstrates that students who enjoy learning for the sake of it are likely to take advantage of voluntary resources, such as a positive psychology class.

Finally, this study provides a new glimpse into student engagement and relationships between positive psychological interventions that may affect engagement and other outcomes for the better. Although training participants’ LGO levels did not significantly increase over the course of this training, significant relationships were found between students’ goal orientation levels, the levels of the -approach and -avoid sub-dimensions, and academic engagement.

**Recommendations for Future Research**

The current study contributes to the existing bodies of knowledge on psychological capital and goal orientation, though there is still much to learn. Continuing to research these constructs could provide a significant amount of understanding to academic and workplace outcomes.

The primary research need is to address the data entry error in measurement that occurred in this study. Utilizing an error-free instrument to capture goal orientation could potentially result in stronger findings. This may help facilitate some of the outcomes anticipated within this study, supporting one or more of the existing hypotheses.

The original version of the AGQ asks for participants to answer regarding their feelings in a particular class (Elliot & McGregor, 2001). However, the AGQ was later revised for domain
specificity within a semester (Finney, Pieper, & Barron, 2004). As mentioned, one of the items of the scale used in this study references thoughts/feelings regarding a class, not the semester, and is considered a limitation of this study due to the data entry error in creating measurement tools. The AGQ item referring to “class” and not “semester” is item 12, which falls in the learning-approach sub-dimension of the scale. Correcting these items prior to the next offering of this training class/study may result in stronger results at Time 2.

Further, it is recommended that the specific version of the AGQ revised for domain specific (semester- vs. class-based) is utilized to capture data in future iterations of this study (Finney et al., 2004). This version of the AGQ has a higher reliability than the original AGQ and items are worded slightly differently to accommodate the domain specificity. Accurately using this version of the AGQ could result in higher and more consistent results at both Time 1 and Time 2. Figure 3 in the Appendix lists the AGQ as utilized in this study, the original AGQ, and the revised AGQ that is recommended for future use.

To address the imbalance of material within the training class (GO occurring in one week/week 2 and PsyCap occurring over four weeks/weeks 4-7), it is worth exploring whether these concepts can be restructured within the training. One possibility could be condensing the psychological capital modules into one or possibly two modules, and/or expanding the goal orientation/growth mindset to match the PsyCap offerings so that each concept receives equal time and effort in training.

Stronger post-training results may also be achieved by restructuring the training material all together so that smaller portions of both the psychological capital and goal orientation material are covered in each session. Currently, goal orientation topics are covered in one module and psychological capital is covered over the course of four modules.
Finally, removing the voluntary aspect of the course may result in stronger opportunities to increase participants’ learning goal orientation. Currently, by allowing individuals to participate in the course at their discretion and for the own benefit, it is likely to appeal most to students who already have a high learning goal orientation, as they are likely to enjoy learning new information for the sheer sake of it (Burnette et al., 2013; Dweck, 1986; Dweck & Leggett, 1988; Payne et al., 2007). By making this course mandatory to some extent, it is likely that individuals higher in performance goal orientation would also participate, providing additional opportunity to shift participants’ goal orientation from performance to learning.

To minimize the possibility of a drastically decreased sample group at Time 2, it may be wise to revisit the timing of the class and/or the measures deployed at Time 2 as well. Changing the timing of the course may yield a higher response at Time 2 if the training ends at a time where exams, final projects, and likelihood of travel are not students’ main focus.

Changing the way post-training surveys are deployed may also result in a larger sample at Time 2 as well. For this study, a link to the electronic post-training survey was sent via email several days following the final offering of the class. This could be changed for both the in-person and online offerings of this training.

For the in-person classes, physical copies of the post-training survey could be circulated before the final session concludes. For students in the online version of the class, the link to an electronic version of the post-training survey could be provided in the chat box of the final module, and students could be asked to complete it as the last deliverable of the course. Either of these, or other similar changes to post-training data collection could result in a higher number of Time 2 responses, which could benefit the study’s power and significance in the future.
In the field, more studies regarding goal orientation in the graduate student population should be conducted as well. This study asked participants to indicate the number of years of full- and part-time work experience they have as a way to bridge the gap between academic and workplace research in psychological capital and goal orientation. Until now, no studies regarding goal orientation have been conducted among graduate students. Doing so provides important insight into both academic and professional populations through a single experimental lens.

Future research should also look more in depth at the sub-dimensions of psychological capital and goal orientation, particularly performance goal orientation. While the supplementary analyses highlighted several significant (but sometimes weak) correlations among psychological capital and goal orientation dimensions and sub-dimensions, research that examines any relationships among these two constructs in a comprehensive manner is severely lacking. Further, all hypotheses in this study pertain strictly to the learning dimension of goal orientation.

Doing so would provide a much greater understanding of how hope, efficacy, resilience and optimism relate to learning and performance goal orientations, and the *approach* and *avoid* valences under each. This would further the development of positive psychology interventions in both academic and workplace settings.

More research is needed regarding goal orientation and psychological capital overall, however this study only examined the relationship(s) between learning goal orientation and psychological capital. A deeper understanding of the relationships between performance goal orientation and psychological capital would be beneficial for the field as well.

Finally, future research should also examine the long-term effects of successful training interventions involving psychological capital, goal orientation, and the combination of both. A limited number of studies have emerged detailing the possibility of longevity in PsyCap training,
but a significant opportunity exists to deepen the understanding of PsyCap and to broaden this understanding for goal orientation as well. Unfortunately, this study did not yield the anticipated results following the partnership of psychological capital with a more trait-focused intervention, such as goal orientation, in training. Additional research is warranted here as well to explore this unique condition of PsyCap training.

Conclusion

This study initially set forth the theory that associating psychological capital with a more stable construct like goal orientation could result in longer-term, more sustainable increases in psychological capital scores, and resulting outcomes as well. An opportunity certainly exists to strengthen this approach and then determine the longevity of the efforts as well. Although the results of this study offer an introductory glimpse into the interconnectedness between psychological capital and goal orientation, a stronger design and general approach may reveal more significance in the overlap between the two concepts. The opportunity certainly remains strong in the literature.

Overall, continued research in these areas will only benefit the collective understanding of the impact mindset has on academic and workplace outcomes. Deeper understanding of these concepts will strengthen practitioners’ ability to improve these outcomes for years to come.
References


orientation in leader developmental readiness. *New Directions in Student Leadership, 149*, 61-71.


Psychological Science, 27, 1078–1091.


Child Development, 84(3), 970–988.

### Appendix A: Positive Psychology Training Schedule

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<td>2</td>
<td>SW4 Growth Mindset &amp; Learner Questions (Goal Orientation)</td>
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<tr>
<td>3</td>
<td>SW5 Goal Setting and Planning</td>
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<tr>
<td>4</td>
<td>SW6 PsyCap: Hope</td>
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<td>SW7 PsyCap: Efficacy</td>
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<td>7</td>
<td>SW9 PsyCap: Optimism</td>
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<tr>
<td>8</td>
<td>SW10 Review, Wrap Up &amp; Planning for Future Success</td>
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</tbody>
</table>

*Note: SW = Semester Week.*
Appendix B: Academic PsyCap (A-PCQ) Items

1. I feel confident analyzing a long-term problem to find a solution concerning my school-related work.
2. I feel confident in representing my ideas concerning my school-related work.
3. I feel confident contributing to discussions about strategies on my school-related work.
4. I feel confident setting targets/goals on my school-related work.
5. I feel confident contacting people to discuss problems concerning my school-related work.
6. I feel confident sharing information with a group of students about my school-related work.
7. If I should find myself in a jam about my school-related work, I could think of many ways to get out of the jam.
8. At the present time, I am energetically pursuing my school-related work goals.
9. There are lots of ways around any problem concerning my school-related work.
10. Right now, I see myself as being pretty successful concerning my school-related work.
11. I can think of many ways to reach my current goals regarding my school-related work.
12. At this time, I am meeting the goals that I have set for myself concerning school-related work.
13. When I have a setback with school-related work, I have trouble recovering from it, moving on.
14. I usually manage difficulties one way or another concerning my school-related work.
15. I can be “on my own” so to speak, if I have to regarding my school-related work.
16. I usually take stressful things in stride with regard to my school-related work.
17. I can get through difficult times at school because I’ve experienced difficulty before concerning my school-related work.
18. I feel I can handle many things at a time with my school-related work.
19. When things are uncertain for me with regards to school-related work, I usually expect the best.
20. If something can go wrong for me with my school-related work, it will.
21. I always look on the bright side of things regarding my school-related work.
22. I’m optimistic about what will happen to me in the future as it pertains to my school-related work.
23. With regards to my school-related work, things never work out the way I want them to.
24. I approach my school-related work as if “every cloud has a silver lining.”

*(Luthans et al., 2012)*
## Appendix C: Achievement Goal (AGQ) Items

<table>
<thead>
<tr>
<th>#</th>
<th>Item</th>
<th>#</th>
<th>Item</th>
<th>#</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current Study</strong></td>
<td></td>
<td><strong>AGQ</strong></td>
<td>(Elliot &amp; McGregor, 2001)</td>
<td></td>
<td><strong>AGQ</strong></td>
</tr>
<tr>
<td><strong>Performance-Approach</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>My goal in this semester is to get a better grade than most of the other students.</td>
<td>3.</td>
<td>My goal in this class is to get a better grade than most of the other students.</td>
<td>1.</td>
<td>My goal this semester is to get better grades than most of the other students.</td>
</tr>
<tr>
<td>2.</td>
<td>It is important for me to do well compared to others in this semester.</td>
<td>2.</td>
<td>It is important for me to do well compared to others in this class.</td>
<td>2.</td>
<td>It is important for me to do well compared to other students this semester.</td>
</tr>
<tr>
<td>3.</td>
<td>It is important for me to do better than other students.</td>
<td>1.</td>
<td>It is important for me to do better than other students.</td>
<td>3.</td>
<td>I want to do better than other students this semester.</td>
</tr>
<tr>
<td><strong>Performance-Avoid</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>I just want to avoid doing poorly in this semester.</td>
<td>10.</td>
<td>I just want to avoid doing poorly in this class.</td>
<td>4.</td>
<td>I just want to avoid doing poorly compared to other students this semester.</td>
</tr>
<tr>
<td>5.</td>
<td>My fear of performing poorly in this semester is often what motivates me.</td>
<td>12.</td>
<td>My fear of performing poorly in this class is often what motivates me.</td>
<td>5.</td>
<td>The fear of performing poorly is what motivates me.</td>
</tr>
<tr>
<td>6.</td>
<td>My goal in this semester is to avoid performing poorly.</td>
<td>11.</td>
<td>My goal in this class is to avoid performing poorly.</td>
<td>6.</td>
<td>My goal this semester is to avoid performing poorly compared to other students.</td>
</tr>
<tr>
<td><strong>Learning-Avoid</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Sometimes I am afraid that I may not understand the content of this semester as thoroughly as I’d like.</td>
<td>5.</td>
<td>Sometimes I’m afraid that I may not understand the content of this class as thoroughly as I’d like.</td>
<td>7.</td>
<td>I am afraid that I may not understand the content of my courses as thoroughly as I’d like.</td>
</tr>
<tr>
<td>8.</td>
<td>I worry that I may not learn all that I possibly could in this semester.</td>
<td>4.</td>
<td>I worry that I may not learn all that I possibly could in this class.</td>
<td>8.</td>
<td>I worry that I may not learn all that I possibly could this semester.</td>
</tr>
<tr>
<td>9.</td>
<td>I am often concerned that I may not learn all that there is to learn in this semester.</td>
<td>6.</td>
<td>I am often concerned that I may not learn all that there is to learn in this class.</td>
<td>9.</td>
<td>I am definitely concerned that I may not learn all that I can this semester.</td>
</tr>
<tr>
<td><strong>Learning-Approach</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>I desire to completely master the material presented in this semester.</td>
<td>9.</td>
<td>I desire to completely master the material presented in this class.</td>
<td>10.</td>
<td>Completely mastering the material in my courses is important to me this semester.</td>
</tr>
<tr>
<td>11.</td>
<td>I want to learn as much as possible from this semester.</td>
<td>7.</td>
<td>I want to learn as much as possible from this class.</td>
<td>11.</td>
<td>I want to learn as much as possible this semester.</td>
</tr>
<tr>
<td>12.</td>
<td>It is important for me to understand the content of this course as thoroughly as possible.</td>
<td>8.</td>
<td>It is important for me to understand the content of this course as thoroughly as possible.</td>
<td>12.</td>
<td>The most important thing for me this semester is to understand the content in my courses as thoroughly as possible.</td>
</tr>
</tbody>
</table>
Appendix D: Utrecht Work Engagement Scale for Students (UWES-S) Items

**Vigor**
1. When I’m studying, I feel mentally strong.
2. I can continue for a very long time when I am studying.
3. When I study, I feel like I am bursting with energy.
4. When studying I feel strong and vigorous.
5. When I get up in the morning, I feel like going to class.

**Dedication**
1. I find my studies to be full of meaning and purpose.
2. My studies inspire me.
3. I am enthusiastic about my studies.
4. I am proud of my studies.
5. I find my studies challenging.

**Absorption**
1. Time flies when I’m studying.
2. When I am studying, I forget everything else around me.
3. I feel happy when I am studying intensively.
4. I can get carried away by my studies.

*(Schaufeli et al., 2002)*