


Building the Leaders of Tomorrow: The Development of Academic Psychological Capital

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Abstract

The now widely recognized core construct of psychological capital (PsyCap) consists of the state-like positive psychological resources of hope, efficacy, resilience, and optimism. PsyCap has been empirically shown in the research literature to be related to various employee attitudinal, behavioral, and performance outcomes and open to development and change. Most recently, PsyCap has also been shown to be significantly related to business student academic performance. Using a pretest, posttest control group design, the present study tested whether the PsyCap of business students can be developed through a micro-training intervention. Results from this quasi-experimental study provide initial support that the Academic PsyCap of business students can be positively affected by a short training intervention.

Keywords

academic performance, academic PsyCap, PsyCap training, psychological capital, student development

Business schools typically have common objectives of developing students to achieve academic success and producing graduates who have the contemporary knowledge and competencies to be successful in their chosen professional careers. Conventional methods used to meet these objectives have often centered on a deficiency model, where “content” and “skills” approaches are used to enhance student learning and development in areas like written and oral communication skills, critical thinking, quantitative skills, use of technology, and functional knowledge of various business disciplines. However, the methods used to achieve these learning goals often achieve little more than remedying the “weaknesses” of individual students (Wingate, 2007). A much overlooked approach for overcoming barriers to academic success and ultimately preparing today’s business students for professional success may be found in the proactive development of positive psychological resources. This approach seems especially relevant in today’s turbulent business environment, which has been destabilized by economic turmoil and high unemployment, downsizing, and by various legal and ethical corporate scandals. Given the pervasiveness of these negative events and potential barriers to success which exist, the development of positive psychological resources within business students might be a key competitive advantage for attaining higher levels of academic and professional success.

Therefore, the purpose of this study is to test whether positive psychological resources, specifically psychological capital (PsyCap), of business students can be developed

through a micro-training intervention model developed by Luthans, Avey, Avolio, Norman, and Combs (2006). PsyCap has drawn from the positive psychology literature over the past decade and has generated considerable attention in the fields of human resource management and organizational behavior (for a recent meta-analysis, see Avey, Reichart, Luthans, & Mhatre, 2011), and more recently, in business education (Luthans, Luthans, & Jensen, 2012). PsyCap consists of the psychological capacities of hope, efficacy, resilience, and optimism, or what Luthans and colleagues have called the HERO within. PsyCap has been identified as going beyond “what you have” (economic capital), “what you know” (human capital), “who you know” (social capital), and consists of “who you are,” and of most relevance for developmental implications, “what you can become” (Luthans, Luthans, & Luthans, 2004; Luthans & Youssef, 2004). Because prior exploratory research has linked the PsyCap of business students with successful academic outcomes such as grade point average (Luthans et al., 2012), the central research question addressed in this article focuses on whether or not these psychological resources

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can be enhanced within business students through a developmental micro intervention.

Overview of PsyCap

The idea that psychological resources can shape and motivate changes in attitudes and behaviors is not new. For example, pioneering social psychologist Kurt Lewin noted that if the

motions of physical objects are governed by physical forces, why can't the wants and intentions of an individual, whether they be conscious or unconscious, be represented as psychological forces acting on the individual to produce changes we observe in behavior. (Atkinson, 1964, pp. 77-78)

Over the past decade or so, the emergence of the positive psychology literature has reinforced the notion that psychological strengths and resources can shape attitudes and lead to desirable outcomes in a variety of life's domains including one's relationships, well-being, athletic and academic success, and workplace outcomes (e.g., see the meta-analysis of Lyubomirsky, King, & Diener, 2005). Work in the area of positive psychology has sought to shift the predominant focus of research in the field of psychology away from what is "wrong" with people and direct it toward the positive qualities and traits of individuals, or what is "right" with people. This shift was in contrast to the dominant preoccupation the field of psychology has had over the past 100 years, which was focused primarily on negative, pathological aspects of human functioning and behavior (Seligman & Csikszentmihalyi, 2000). For example, as recently as 1998, there was a 17-to-1 negatively focused-to-positive ratio of research articles in the field of psychology (Achor, 2010). In other words, there were 17 studies that focused on human dysfunction (e.g., disorders, stress, depression, anger, etc.) to every one study conducted on optimal human functioning (e.g., happiness, flow, flourishing, etc.). The focus of positive psychology has been to use scientific methodology to analyze and promote factors that focus on health and vitality, make people's lives better, and to build on the strengths of people rather than being preoccupied with their weaknesses (Seligman & Csikszentmihalyi, 2000).

Drawing from this positive psychology literature, Luthans (2002a) called for research that demonstrated the effectiveness and applicability of positive psychological resources in the workplace. The term "Positive Organizational Behavior," or simply *POB*, was coined by Luthans (2002b) and defined as "the study and application of positively oriented human resource strengths and psychological capacities that can be measured, developed, and effectively managed for performance improvement in today's workplace" (p. 59). Luthans (2002b) also noted that to be considered part of *POB*, the positive construct must be

grounded in theory and research, it must have valid and reliable measures, it must be "state-like" and thus be open to development, and it must demonstrate a positive impact on attitudes, behaviors, and workplace performance. According to Luthans (2002a), the psychological resources that have been determined to best meet these aforementioned inclusionary criteria of positive organizational behavior included hope, efficacy, resilience, and optimism.

Theory development (Luthans & Youssef, 2007; Luthans, Youssef, & Avolio, 2007) and extant research (Luthans, Avolio, Avey, & Norman, 2007) have also indicated that the identified positive organizational behavior states of hope, efficacy, resilience, and optimism represent a single latent, core factor termed *psychological capital*, or simply *PsyCap*. Positive Psychological capital is defined as

an individual's positive psychological state of development characterized by: (1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward the goals, and when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resilience) to attain success. (Luthans, Youssef, et al., 2007, p. 3)

Although each of the individual components of *PsyCap* has demonstrated convergent and discriminant validity, prior research has established that *PsyCap* is a higher order construct that predicts performance and employee satisfaction better than any of the individual components that comprise it (Baron, Franklin, & Hmieleski, 2013; Luthans, Avolio, et al., 2007). In a meta-analysis involving 51 independent samples and a total of 12,567 employees, Avey et al. (2011) reported a strong and negative relationship between the self-reported *PsyCap* levels of workers and undesirable attitudes such as cynicism for change, stress, anxiety, and turnover intentions. In addition, this comprehensive quantitative review found a positive relationship between *PsyCap* and desirable employee attitudes (e.g., job satisfaction, organizational commitment, and well-being), organizational citizenship behaviors, and performance measured multiple ways.

Academic PsyCap

Extant research studies have also explored the relationship between the individual psychological constructs that make up *PsyCap*—hope, efficacy, resilience, and optimism—and student academic performance. For example, hope has been defined as a positive motivational state based on an interactively derived sense of successful (a) agency and (b) pathways (Snyder, Harris, & Anderson, 1991). Agency represents an individual's motivation or "willpower" to reach a certain goal (e.g., "I meet the goals that I set for

myself"). Pathways represent an individual's "waypower" or ability to generate multiple strategies and proactive contingency plans in order to overcome obstacles (e.g., "When I have a problem I can think of many ways to solve it"). In particular, high-hope individuals have an ability to forecast barriers that stand in their way and the capability to proactively generate multiple pathways to attain their goals. Related to academic success, hope enables students to set valued goals, identify the means to achieve those goals, and summon the motivation to achieve them (Snyder, 2002). Research has shown that high hope is related to better outcomes in academics, athletics, physical health, and psychological adjustment (e.g., Curry, Snyder, Cook, Ruby, & Rehm, 1997; Snyder, 2002).

The psychological construct of self-efficacy has been defined as "one's conviction about his or her abilities to mobilize the motivation, cognitive resources or courses of action needed to successfully execute a specific task within a given context" (Stajkovic & Luthans, 1998, p. 66). Bandura (1997) has found that people will try harder and give more effort to tasks where they have higher efficacy than those where their efficacy is minimal. In addition, they are tenacious in maintaining effort toward a task despite encountering problems. Finally, those with low efficacy tend to experience stress and anxiety because they expect to fail, whereas highly efficacious individuals enter into potentially stressful situations with confidence and assurance and thus are able to resist stressful reactions. The influence of efficacy beliefs within academic contexts has been found to be a significant predictor of academic performance (Valentine, DuBois, & Cooper, 2004; Zimmerman, Bandura, & Martinez-pons, 1992), and as a mediating variable influencing students' levels of effort, persistence, and perseverance (Zeldin & Pajares, 2000). Self-efficacy has also been shown to be a good predictor of first-year college student academic performance (Chemers, Hu, & Garcia, 2001).

While efficacy is the belief individuals have in their ability to be successful on a given task, optimism is an expectation of future success. As Carver and Scheier (2002, p. 231) have noted, "Optimists are people who expect good things to happen to them; pessimists are people who expect bad things to happen to them." In addition, optimists interpret negative events as external, temporary, and situation specific, and positive events as having personal, permanent, and pervasive causes (Seligman, 1998). In general, those with optimistic explanatory styles are more likely to be motivated to achieve a goal because they expect a successful outcome. These differences in explanatory style can have a significant impact on performance outcomes in a variety of life's domains including academic success. For example, studies have shown that students with more optimistic styles significantly outperform those with pessimistic styles in the classroom (e.g., Ruthig, Perry, Hall, & Hladkyj, 2004; Solberg, Evans, & Swgerstrom, 2009; Stoecker, 1999; Valentine et al., 2004).

While hope, efficacy, and optimism are proactive constructs, resilience is more of a reactive capacity that one draws on when faced with adversity. Resilience "refers to a class of phenomena characterized by patterns of positive adaption in the context of significant adversity or risk," which facilitates the ability of individuals to bounce back rapidly from adverse events (Masten & Reed, 2002, p. 75). Luthans (2002a, p. 702) has defined resilience as the "positive psychological capacity to rebound, to 'bounce back' from adversity, uncertainty, conflict, failure, or even positive change, progress, and increased responsibility." Resilient individuals learn to better cope with mistakes, failures, or setbacks. Rather than become emotionally distracted, resilient individuals take on challenges and recover from mistakes. In short, they refuse to let bad circumstances keep them from performing well. For example, studies in educational settings have shown that students' academic resilience levels predicted educational and psychological outcomes such as enjoyment of school, class participation, and general self-esteem (Martin & Marsh, 2006).

Prior research provides strong empirical support for the notion that those individuals who possess the psychological resources that comprise PsyCap are generally more hopeful in terms of the will and the way to accomplish their goals, are realistically optimistic about attaining positive outcomes, have efficacy beliefs to confidently pursue new objectives, and resiliently bounce back and beyond from setbacks. Although the impact of PsyCap has been most heavily investigated in the workplace, conceptually it makes sense that when bundled together, these psychological resources would also relate to academic success. Extensive prior research has linked the individual components of PsyCap (i.e., hope, self-efficacy, resilience, optimism) with positive academic outcomes, and initial exploratory research has also shown a positive association between the higher order, core construct of PsyCap and academic achievement among college business students. Given these previous findings, the purpose of the present study is to examine whether PsyCap can be developed within business students using a short training intervention. By developing these psychological resources, it is proposed that business students would have a stronger likelihood of achieving academic success and possibly even greater career success.

"State-Like" Versus "Trait-Like" Characteristics

There has been discussion and subsequent contention over the years in psychology regarding the distinction between states and traits. Recently, there is growing support that states and traits realistically fall along a continuum. On one end of the continuum are fixed traits such as intelligence, talents, and heritable characteristics, which are not as open to change and development. Next on the continuum are trait-like variables such as the Big Five personality dimensions, core self-evaluations, and positive affectivity, which

are somewhat fixed and difficult to change. Moving further along the scale are the state-like constructs of hope, efficacy, resilience, and optimism, which are malleable and open for change and development. And finally, on the extreme end of the continuum would be emotional states, moods, and pleasure, which are momentary and can readily change (Chen, Gully, Whiteman, & Kilcullen, 2000; Luthans et al., 2006).

There is empirical evidence that the psychological capacities that make up PsyCap are not as fixed as personality characteristics but more stable than emotions and thus fall between pure state- and trait-like constructs (Luthans, Avolio, et al., 2007). This state-like position on the continuum suggests that the PsyCap resources of hope, efficacy, resilience, and optimism are malleable and thus open to change and development. Considerable theory development and empirical research also support their developmental, state-like nature. For example, Bandura (1997) noted that efficacy expectations are acquired and modified via four major sources: (a) task mastery, (b) exposure to and identification with efficacious models (vicarious learning), (c) access to feedback and persuasive support from others, and (d) experience of emotional or physiological arousal in the context of task performance. In his widely recognized book *Learned Optimism*, Seligman (1998) offered specific guidelines for developing realistic optimism within individuals. Seligman referred to this framework as an ABCDE Model for changing your internal dialogue. To summarize, this approach to develop optimism suggests that first one needs to reflect, diagnose, and identify self-defeating beliefs when faced by adversity. Next, one needs to reflect and evaluate the accuracy of their beliefs. Finally, if one's beliefs are discounted or questioned, they should be replaced with more realistic, constructive, and accurate beliefs. In support of Seligman's arguments for changing one's level of optimism, Carver and Scheier (2002, p. 240) have concluded, "Change in an optimistic direction is possible" through developmental interventions. Snyder (2000) has demonstrated hope as being developable across multiple clinical studies using a goals-based, contingency planning framework. Finally, strategies related to resiliency enhancement have been adapted from the clinical work of Masten (2001). In particular, the asset-focused strategy for resiliency development encourages individuals to use personal and organizational/institutional resources that will increase the probability of desirable outcomes. The risk-focused strategy centers on managing or avoiding risks to increase the probability that undesirable outcomes will be prevented.

PsyCap Development Interventions

Positive Psychology interventions can be described as "intentional activities that aim to cultivate positive feelings, behaviors, or cognitions" (Sin & Lyubomirsky, 2009, p.

468). As indicated, one of the main features of PsyCap is that it is state-like and open to development through relevant training programs (Luthans, Youssef, et al., 2007). In particular, Luthans et al. (2006) developed a PsyCap Intervention (PCI) training model designed to increase levels of hope, efficacy, resilience, and optimism individually as well as the overall level of PsyCap for performance improvement.

In the PCI, the hope construct is developed by having the participants identify work-related goals that are both personally valuable and challenging. Next, the participants are asked to generate multiple pathways to reach these goals and identify the potential obstacles they may encounter. Then, each participant receives small discussion group feedback, which then is expected to lead to additional pathways that had not previously been considered in accomplishing their goals and overcoming their obstacles. This practice should increase pathway generation capacities and the ability to plan for obstacles. In doing this, we expect that the participants' efficacy for accomplishing goals is enhanced. This process should also lead to more positive expectations of future success, thus enhancing levels of optimism.

Next, through deriving multiple pathways to accomplish the goals, resilience is also expected to be developed. In other words, since resilience involves positively coping with failures or setbacks, when a goal is not reached, multiple pathway generation allows individuals to select alternative pathways when the original pathway becomes blocked, giving them the wherewithal to "bounce back," overcome the setback, and be more confident (efficacious) and successful. In addition, to raise their resilience, participants are asked to list their assets (e.g., education, experience, skills, etc.) and personal and organizational resources they can use (e.g., friends, family, coworkers, mentors, Employee Assistance Program, a supplemental budget request, etc.) in order to be persistent in reaching their goals.

The PCI has been shown to be effective at increasing PsyCap levels, both in the workplace and in educational settings. For example, one study of employees in a cross-section of industries who received a 2-hour online PCI training intervention showed a significant and positive increase in their PsyCap levels in comparison to a randomly assigned control group, which received a different but relevant intervention (i.e., team building and leadership exercise). Importantly, through this experimental design, the PCI training was shown to cause the participants' PsyCap to significantly increase (Luthans, Avey, & Patera, 2008).

In another cross-sectional study of practicing business managers, Luthans, Avey, Avolio, and Peterson (2010) were able to demonstrate that PsyCap can be developed. Results indicated that those managers who underwent PsyCap training had significantly higher levels of PsyCap following the intervention. Moreover, both self-rated performance and

manager-rated performance increased significantly as a result of the intervention. And in a pilot study of undergraduate business students, using a controlled experimental design, researchers were able to demonstrate a significant difference between the PsyCap levels of undergraduate business school students who received the PCI training versus the randomly assigned students in the control group who did not (Luthans et al., 2010). These studies provide initial evidence demonstrating that PsyCap can be developed with short training interventions such as the PCI.

Since PsyCap has been shown to have a positive impact on employee performance (Avey et al., 2011; Luthans, Avolio, et al., 2007), as well as most recently with student academic performance (Luthans et al., 2012), together, these findings suggest that business students should benefit from the integration of PsyCap development activities into their business school curriculum. Therefore, our study hypothesis is that business students' PsyCap will be significantly improved through a short PCI training intervention. After presenting the methods and results, implications for developing student PsyCap and suggestions for the direction of future research will conclude the article.

Methods and Results

To conduct this study, 214 undergraduate business students from two mid-sized Midwestern universities were randomly assigned at the classroom level to either treatment or control groups resulting in an experimental research design with completed data from 118 in the treatment group and 96 in the control group. To conduct the experiment, we used the recently validated PsyCap Intervention model (described above and summarized in Figure 1) to impact the four constructs and the combined core factor of psychological capital (Luthans et al., 2006). The focus and examples used in the present study were modified to be relevant for the students in this sample. For instance, instead of determining work-related goals, students were asked to identify important goals related to their academic and educational aspirations. In addition, the study participants were asked to consider problems, challenges, and obstacles related to their academic goals as opposed to work-related constraints. The discussion groups involved interactions with fellow students. Both school PsyCap (in the academic domain) and life PsyCap (in the whole life domain) were measured as criterion variables. A little over half (56%) of this sample were male and their average age was 22.5 ($SD = 5.22$). In addition, the sample primarily included working adult students (68%) with an average weekly schedule working 24.16 ($SD = 10.68$) hours per week. In terms of ethnicity, participants were mostly Caucasian (91%).

The treatment groups received a 2-hour PCI training intervention conducted by training facilitators that used a series of exercises and group discussions as described above

to impact the participants' level of efficacy, hope, optimism, and resilience, individually and overall in terms of their PsyCap. All materials and exercises were the same for all treatment groups. Specifically, participants received the intervention first targeting hope and efficacy followed by resilience and optimism. Those assigned to the comparison control groups were given a different (i.e., next best) intervention that focused on team-building and leadership (not the four positive constructs), and included similar duration and exercise format to maintain as much equivalence of the treatment and control conditions as possible. PsyCap was measured with the 24-item instrument validated by Luthans, Avolio et al. (2007) and adapted for this study for college students at Time 1 (pre) and Time 2 (post) for both school and whole life PsyCap. Sample questions from each of the construct subscales included the following: "There are lots of ways around any problem concerning my schoolwork" (hope); "I feel confident setting targets/goals for my schoolwork" (efficacy); "I usually manage difficulties one way or another concerning my schoolwork" (resilience); and "I always look on the bright side of things regarding my schoolwork" (optimism). This scale (on a scale of 1 = *Strongly disagree* to 6 = *Strongly agree*) has demonstrated strong factor analytic structure and reliability for multiple studies (e.g., for a detailed evaluation of the conceptualization and psychometric underpinnings of the PsyCap construct, see Dawkins, Martin, Scott, & Sanderson, 2013, and for its successful adaptation to the academic domain, see Luthans et al., 2012) and demonstrated strong reliability in this study with Cronbach's alphas ranging from .89 to .93.

To compare the treatment and control group analysis of variance (ANOVA) was used. Within groups ANOVA was used to determine the extent to which the treatment groups increased levels of PsyCap and control groups did not. Between groups ANOVA was used to determine initial equivalence between the groups and the extent to which the treatment group increased PsyCap to levels significantly above the control group. PsyCap measures were taken at the same time by subjects from both the treatment group and the control group one week prior to the intervention (pretest) and then again 8 weeks after the micro-intervention (posttest).

There were three steps in the data analysis: (a) demonstrating initial equivalence, (b) demonstrating the effectiveness of the intervention within groups, and (c) demonstrating the effectiveness of the intervention between groups. Before testing our hypothesis, between groups ANOVA was conducted to ensure initial equivalence between groups. In other words, we needed to ensure there were minimal sample differences between the groups and to ensure the groups started at the same levels of PsyCap. With available data, there were no differences in the sample between the treatment and control groups for age ($F = 1.17, p = .28$), whether or not the individual was employed full-time ($F = .071, p =$

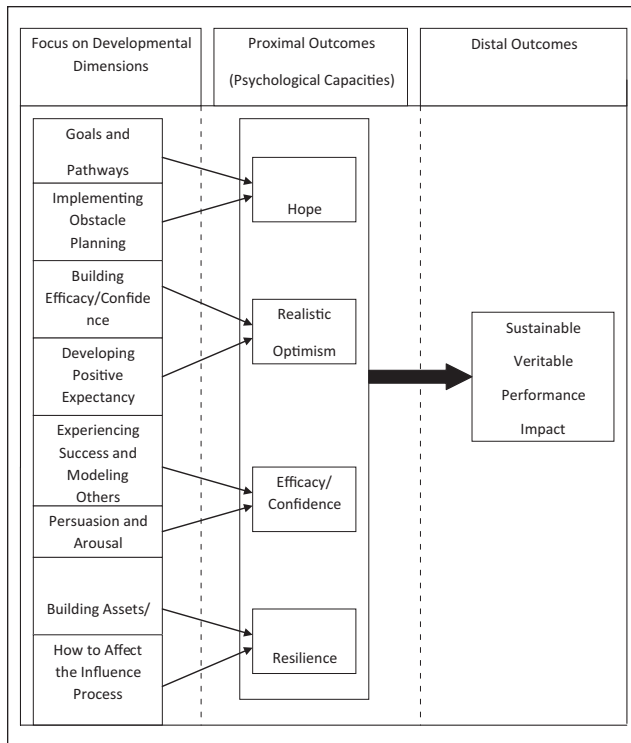


Figure 1. Positive psychological capital intervention. Note. This intervention is intended to affect each psychological resource thereby contributing to the overall level of psychological capital for performance impact. Source. Adapted from Luthans et al. (2006) and also found in Luthans, Youseff et al. (2007).

Table 1. Paired Sample *t* Tests for All Study Variables.

Variable	Mean T1	Mean T2	<i>t</i> Value	<i>p</i> Value
Treatment group				
Academic PsyCap	4.65	4.77	2.59	.01
Whole life PsyCap	4.58	4.72	2.61	.01
Control group				
Academic PsyCap	4.54	4.57	0.33	.74
Whole life PsyCap	4.58	4.45	-1.01	.31

Note. PsyCap = psychological capital.

.79), or how many hours per week worked ($F = .16, p = .69$). Furthermore and most important, for whole life PsyCap (Treatment = 4.59, Control = 4.59, $F = .001, p = .97$) and academic PsyCap (Treatment = 4.65, Control = 4.56, $F = .88, p = .35$), there was no significant difference between the groups. These data suggest that initially, both groups were statistically equivalent. To demonstrate the effectiveness of the intervention within groups, an ANOVA was conducted comparing Time 1 and Time 2. As can be seen in Table 1, academic/school PsyCap significantly increased levels of PsyCap from Time 1 to Time 2, whereas

in the Control group there was no change in PsyCap scores. Results from this analysis suggest the PsyCap intervention was effective in increasing levels of PsyCap for those that received the treatment. Contrarily, those that did not receive the treatment demonstrated no change in their levels of PsyCap.

The next step in the data analysis included a between groups ANOVA to determine the extent to which at the end of the intervention those receiving the treatment demonstrated higher levels of PsyCap than those not receiving the training. At the conclusion of the experiment, the treatment group demonstrated higher academic PsyCap, $M = 4.77 (SD = 0.57)$, than the Control group, $M = 4.55 (SD = 0.67)$, $F = 4.53, p < .05$. This result was also consistent with the outcome of Whole Life PsyCap, Treatment $M = 4.77 (SD = 0.57)$, Control $M = 4.45 (SD = 0.92)$, $F = 4.88, p < .05$. As a final and more robust test of results, we employed analysis of covariance (ANCOVA) to determine if the difference between the treatment and control groups were statistically significant at Time 2 after controlling for PsyCap at Time 1. Results from the ANCOVA reveal that when controlling for PsyCap at Time 1, there was still a significant difference between the treatment and control groups for both academic PsyCap ($F = 12.93, p < .01$) and whole life PsyCap ($F = 11.58, p < .01$). In sum, this analysis suggests that (a) the groups were equivalent at the beginning of the experiment, (b) the Treatment group experienced an increase in PsyCap within the group after the intervention, and (c) this increase led to a statistically higher level of PsyCap for the Treatment group at the end of the experiment that was also higher than the control group even after controlling for PsyCap at Time 1.

Discussion

The results from this study provide very preliminary support that the Academic PsyCap of business students can be positively affected by short training interventions such as the PCI. These results are consistent with prior research findings, which have demonstrated the effectiveness of PsyCap development programs (e.g., Luthans et al., 2008; Luthans et al., 2010) and other similar types of positive psychology interventions (see meta-analysis by Sin & Lyubomirsky, 2009). However, in order to have the greatest impact, it is important to think about additional long-term strategies for boosting the Academic PsyCap of business students beyond the short PCI described in this study. As Sin and Lyubomirsky (2009, p. 483) have commented, “Exerting high levels of effort to practice a happiness-boosting strategy, and continuing to practice it even after the intervention is over, results in greater improvements.” In other words, students must continually work to proactively develop their Academic PsyCap in order to create a lasting effect for overcoming barriers to academic success. This idea is consistent with Bandura’s (1997) famous truism that we are both products and producers of our

positivity (i.e., PsyCap). Sin and Lyubomirsky (2009) have also noted that a “shotgun” approach, in which individuals practice multiple development activities, is more effective for developing positivity than engaging in an isolated development intervention.

Additional strategies that can be drawn from positive psychology for enhancing PsyCap and cultivating a sustainable positive mind-set within business students include the following:

Gratitude Expressions. As part of a class assignment, business students could be asked to keep a journal throughout the semester and to write down things they feel grateful about. Ideally, this would be done at night just before going to sleep. This exercise would allow a student’s positive thoughts and emotions to “marinate” throughout the night, become embedded in their subconscious mind, and eventually change their internal dialogue to a more optimistic orientation. Consistent with positive psychologist Barbara Fredrickson’s (2001) broaden-and-build theory, facilitating positive emotions helps create a positive upward spiral. For example, keeping a journal or writing gratitude letters to someone special triggers positive emotions and the development of important psychological resources (e.g., receive by giving). These resources lead to the experience of positive emotions, which, in turn, produces even more personal resources, and so on.

Vicarious Learning. It is important for students to think about placing themselves in positive situations and to identify efficacious role models. Bandura (1999) noted that if individuals observe relevant others succeeding, they will have increased confidence in their own abilities. Applied to the development of efficacy within business students, the increased use of respected peer leaders, tutoring, and study groups is recommended. For example, students in upper-level undergraduate courses could be assigned to work with peer leaders or MBA students on cases, projects, and other assignments. Creating this cooperative classroom style would help develop efficacy by providing vicarious learning experiences and also by using role models who would closely resemble those observing and lead to the conclusion that “if they can do it, I can do it too.”

Physical and Mental Well-being. Students should be encouraged to do physical exercise and/or meditate/yoga on a daily basis. According to the work of Masten (2001), an individual’s resilience is shaped by asset factors, risks factors, and influence processes. The most effective development strategies tend to be based on enhancing assets (e.g., networking through student and professional organizations, staying physically fit) and avoiding risky, potentially adverse

situations (e.g., working long, strenuous hours in a part-time job, becoming stressed and burned out).

The PCI described in the present study provides a specific framework for enhancing Academic PsyCap levels with specific applications relevant to business students. To create a residual effect, it is important to think about other rituals and goals, such as described above that could be incorporated into the everyday lives of students. Once ingrained, these activities would become habits that lead to sustained academic achievement and lead to future career success.

Limitations and Future Research

As with any study in the social sciences, there are limitations in this study including both internal and external validity that should be considered. Although this study included an experimental research design, there are concerns of instrument range restriction, longitudinal considerations, and generalizability to other participants on the strata of age and education level. First, the demonstrated increase on academic and whole life PsyCap was statistically significant but practically very small. The increase was significant due to a relatively small standard deviation. This was likely due to what has been referred to as range restriction. The PsyCap means for all participants were more than 4.5 on a scale set from 1 to 6 with most responses on individual items being a 4 or 5. Future research can augment this study through the use of alternative measures of PsyCap less susceptible to response bias (e.g., social desirability) to create more normally distributed data. Next, while this study employed a pre–post design, the sustained impact of the intervention can only be tested through the use of longitudinal research designs. With this study it is impossible to infer if a legitimate and lasting impact on PsyCap resulted from the intervention or merely a temporary spike. Finally, also likely contributing to the range restriction was the nature of the sample. All participants were college students with a mean age of 22.5 ($SD = 5.22$). Therefore, the generalizability of the findings to other populations such as older in age or different education levels is limited. Furthermore, all participants were based in the United States, suggesting cultural limitations to generalizability as well. In sum, future research should consider alternative measures of PsyCap with a longitudinal research design on a more heterogeneous sample.

Prior research has demonstrated an association between the Academic PsyCap of business students and their academic performance (Luthans et al., 2012). Future investigations are in process to examine other linkages between Academic PsyCap and important outcomes such as student engagement, satisfaction, and retention. In addition to the pedagogical implications, there are also several future research implications because more studies are needed to

fully understand the current results and the implications for developing students. First, given the relative importance of PsyCap in the professional environment, researchers can track such participants longitudinally into their career to begin addressing several research questions, such as how higher levels of PsyCap as a student influence future PsyCap in the job domain. In other words, do students higher in PsyCap become employees with higher PsyCap? It is important to recognize that PsyCap is a domain level construct, meaning higher PsyCap in one domain does not necessarily mean higher PsyCap in another. Future research can explain the conditions of PsyCap transfer for individuals, which may include individual differences, job type, leadership and demographic variables.

Second, in addition and related to the transfer of PsyCap to the workplace, what are the outcomes of enhancing a student's PsyCap scores? Do newcomers higher in PsyCap adjust better at work? Do they have higher performance initially or better work attitudes? This research should engage a longitudinal research design that tracks these students into the workforce.

Third, given the state-trait discussion of PsyCap, we know from interventions that PsyCap can be increased through interventions. However, future research should be undertaken to understand how long these interventions are effective or sustain in terms of impact. For example, do PsyCap interventions only lead to a slight temporary increase primarily based on an affective stimulation, or are they a legitimate sustainable increase? Do these interventions initiate an increasing process where the impact of the intervention increases over time rather than maintaining or stagnating?

In each of these cases a longitudinal research design is necessary to fully understand the aspect of time in PsyCap impact across different contexts and populations. In sum, while the present research is exciting given the positive impact of the PsyCap intervention on academic PsyCap, there is substantial opportunity to better understand the process of PsyCap interventions on both future students and employees.

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