DISSERTATION

TRANSFORMATIONAL TEACHERSHIP: HOW PRINCIPLES OF TRANSFORMATIONAL LEADERSHIP FOSTER STUDENT OUTCOMES

Submitted by

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ABSTRACT

TRANSFORMATIONAL TEACHERSHIP: HOW PRINCIPLES OF TRANSFORMATIONAL LEADERSHIP FOSTER STUDENT OUTCOMES

As higher education continues to undergo reform, the role of teachers as leaders in the classroom is becoming more important than ever. However, there is a relative dearth of information regarding the operationalizing of transformational leader behaviors and understanding the theoretical mechanisms that explain how transformational leadership facilitates positive outcomes for followers. Therefore, the purpose of this study was to create and test specific behaviors of transformational teachers, as well as to propose a new model of transformational teachership that explains how transformational teachers facilitate followers' experience of three psychological states, perceived meaningfulness, psychological safety, and self-efficacy, which in turn influences student outcomes, including student engagement, satisfaction, effort, and performance. Using an experimental design with 541 undergraduate students and 3 graduate student instructors, the results of this study demonstrated an observed difference in student observations of transformational leadership behaviors (at Time 1 and Time 2), as well as students in the experimental condition performing significantly better than students in the control condition. Results for the proposed psychological states that mediate the relationship between transformational teachership and students outcomes were mixed. In this study, perceived psychological meaning was strongly supported as a mediating variable, but psychological safety and academic self-efficacy were not.

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Finally, I'd be remiss if I didn't acknowledge the crucial role of my husband, Jay. Thank you for teaching me about reservoirs, explaining the importance of spreadsheets, and (most importantly), making me laugh. I can face anything because you are by my side.

DEDICATION

To Jay Peters, my best friend and my better half.

To Richard and Lucy Weidert, my parents and my inspiration.

To Jessica, Jacob, Jennifer, and Michael, my siblings and my granita partners for life.

Words cannot express how much I love you all.

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INTRODUCTION

Researchers have argued for the importance of teachers' leadership behavior in the classroom (e.g., Baba & Ace, 1989; Bolkan & Goodboy, 2011; Pounder, 2008), creating a paradigm shift in the educational literature towards teachers as transformational leaders in their classrooms (Bolkan & Goodboy, 2009; Little, 2003; Pounder, 2006, 2008). Empirical evidence supports that transformational teachers do indeed play a role in fostering student performance and attitudes (e.g., Harvey, Royal, & Stout, 2003; Pounder, 2003; 2008; Walumbwa, Wu, & Ojode, 2004). For example, students perceiving their instructors as transformational demonstrate extra effort on class activities, and report strong perceptions of teacher effectiveness and satisfaction with their teachers (Pounder, 2008). However, despite the positive initial findings of applying transformational leadership from organizational sciences to the educational context, few researchers have described specific behavioral indicators of transformational leadership in the classroom or examined the theoretical underpinnings of how transformational teachers exert their leader influence on their students (i.e., followers). Furthermore, no researchers to date have manipulated transformational leadership in an educational context to demonstrate the causal effect on student outcomes. Thus, most studies report correlational results; hardly concrete evidence that transformational leadership is the reason for improved student performance and more positive attitudes. As a result of these critical gaps in the leadership and education literatures, I propose to address each of these shortcomings by drawing heavily on theory and established literature in the field of organizational psychology and management to propose and test a theory of *transformational teachership* (see Figure 1).

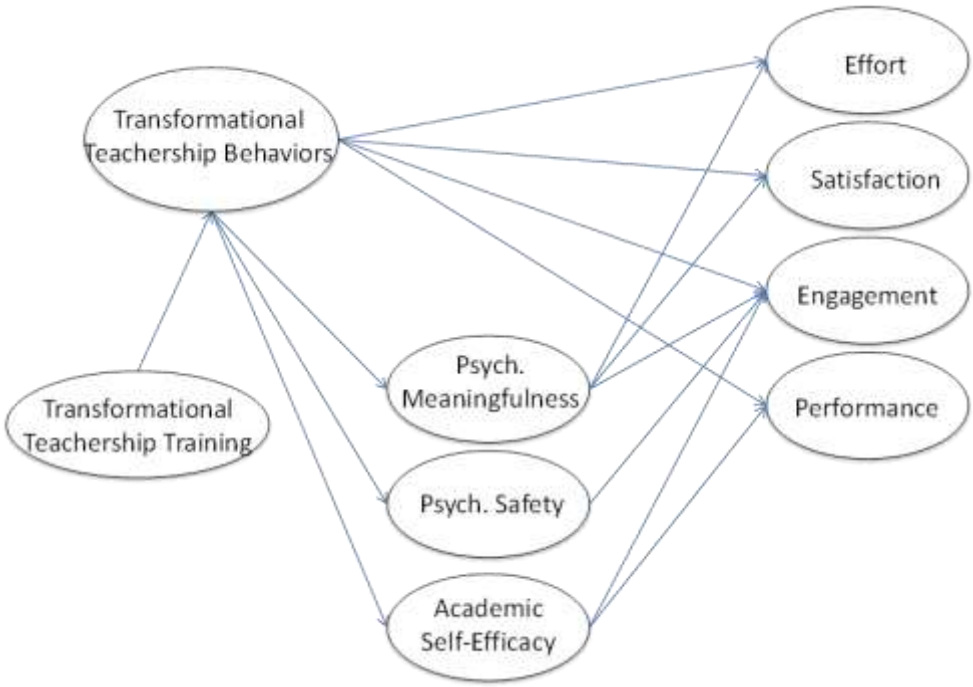

Figure 1.

Transformational Leadership

Transformational leadership is a style of leadership that promotes the development and performance of followers beyond expectations (Avolio & Gibbons, 1988; Bass, 1985; Bass & Riggio, 2006; Graham, 1988). In the organizational sciences, leadership research has garnered a lot of attention, with transformational leadership occupying the spotlight. For example, a quick search of online databases reveals an overwhelming number of studies that attempt to define, develop, or predict transformational leadership. To illustrate, when searching the Psych Info database for "transformational leadership," over 2,500 hits are listed. Results are even more dramatic when using Google Scholar as the search engine, reporting over 100,000 hits for academic articles relating to transformational leadership. The reported positive effects of transformational leadership on follower outcomes make these search results understandable, as transformational leadership has been related to motivation, satisfaction, and performance (e.g., Conger, Kanungo, & Menon, 2000; Hater & Bass, 1988; Howell & Frost, 1989; Pounder, 2008).

Indeed, the emergence of transformational leadership over the last three decades has enhanced the collective understanding of organizational leadership. The term "transformational leadership" first showed up in Burns' (1978) book on political leadership, wherein he distinguished two types of leaders: transactional leaders, those who focus on rewards and punishment as incentive to get followers to enact certain behaviors, and transformational leaders, those who appeal to the moral values of followers and attempt to get them to reform organizations. Despite Burns' focus on political leadership, the concept quickly spread among management scholars (Humphreys & Einstein, 2003), including Bernard Bass. Using Burns' (1978) work as a conceptual springboard, Bass (1985) expanded the scope of transformational leadership to include organizational leaders. Since then, transformational leadership has become a dominant approach reported in the leadership literature (Barling, Christie, & Hoption, 2011; Judge & Bono, 2000; Yukl, 1989).

The Four Dimensions of Transformational Leadership

Transformational leadership is generally conceptualized as comprising four dimensions: idealized influence, individualized consideration, inspirational motivation, and intellectual stimulation (Bass, 1985, Bass & Riggio, 2006). *Idealized influence* refers to leaders who demonstrate integrity, a moral commitment to followers, and selflessness (Barling et al., 2011; Bass, 1985, Bass & Riggio, 2006). Leaders who demonstrate idealized influence resist pressures to take easy or unethical shortcuts. Rather, they are focused on the collective good of the organization and its employees, and remain committed to the long term well-being and success of the organization and its employees. *Individualized consideration* refers to the acknowledgement of the personal needs of each follower (Barling et al., 2011; Bass, 1985, Bass & Riggio, 2006). The leader recognizes that followers vary in their need for achievement and

developmental requirements, and as a result attends to his or her followers' needs on an individual basis; acting as a mentor and displaying caring and empathic behaviors. These supportive behaviors help followers develop their skills and maximize their potential (Barling et al., 2011). *Inspirational motivation* refers to leaders' helping their followers exceed their own expectations of themselves (Barling et al., 2011; Bass, 1985, Bass & Riggio, 2006). Transformational leaders who demonstrate inspirational motivation optimize their followers' performance by setting high yet realistic goals, providing encouragement and support in the face of setbacks, and by instilling a sense of self-efficacy in their followers. In addition, transformational leaders excite followers by using inspirational motivation such as sharing stories and using symbols to communicate their vision. Lastly, *intellectual stimulation* refers to the way in which transformational leaders encourage their followers to solve problems independently (Barling, et al., 2011; Bass, 1985, Bass & Riggio, 2006). Such intellectual stimulation positions the leader as a facilitator of knowledge. By helping employees reframe problems, by providing resources for further investigation, and by allowing employees to formulate their own conclusions, transformational leaders help facilitate the critical thinking skills of their followers. Hence, intellectual stimulation behaviors promote a culture where followers are active thinkers and become more involved in the organization (Tims, Bakker, & Xanthopoulou, 2011).

Debate over more dimensions. Though Bass' four dimensions of transformational leadership are well-established (e.g., Bass, 1985, Bass & Riggio, 2006), there has been some debate over the exact number of dimensions that comprise the construct (e.g., Rafferty & Griffin, 2004; Yukl, 1999). Discussion over the number of dimensions typically turns to questions over measurement issues associated with the Multifactor Leadership Questionnaire (MLQ), a

proprietary questionnaire designed to assess Bass' four dimensions (e.g. Bycio, Hackett, & Allen, 1995; Den Hartog, Muijen, & Koopman, 1997; Rafferty & Griffin, 2004; Tejeda, Scandura, & Pillai, 2001). The majority of concerns relate to the use of the MLQ, as opposed to conceptual problems with the four dimensions themselves. Nonetheless, some researchers have reported other conceptualizations of transformational leadership that incorporate more or less than four dimensions (e.g., Bycio et al., 1995; Rafferty & Griffin, 2004). As a result of the lack of research converging on any other alternative conceptualizations, the majority of leadership researchers use Bass' four dimension model as described above (see Barling et al. 2011, for a comprehensive review on the current leadership field). Bass' conceptualization has thus far been extremely useful in understanding and predicting transformational leadership (Judge & Piccolo, 2004). Therefore, given the near consensus and established research literature base for the four dimensions of transformational leadership, I adopt that same conceptualization in the current study. Specifically, transformational leadership is characterized by four dimensions (idealized influence, individualized consideration, inspirational motivation, and intellectual stimulation).

Transformational leadership plays an important role in fostering employee motivation, performance, and positive job attitudes (e.g. Judge & Piccolo, 2004). For example, Howell and Frost (1989) found that followers of transformational leaders report less role conflict, higher task performance, and higher task satisfaction than followers without transformational leaders. Perhaps one of the most compelling findings in the empirical literature is that transformational leaders foster above average performance in their followers (Wang, Oh, Courtright, & Colbert, 2011). Furthermore, as organizational leaders, transformational leaders are themselves perceived as being effective and strong performers (Conger, et al., 2000; Hater & Bass, 1988), making transformational leadership coveted in organizations.

Shortcomings in the Literature

Despite the popularity and positive accolades for transformational leadership, however, many researchers have called attention to the lack of theory in understanding the underlying processes by which transformational leadership creates positive outcomes (e.g., Avolio, Walumbwa, & Weber, 2009; Yukl, 1999). By not understanding the underlying processes of how transformational leadership exerts its influence, scientists and practitioners struggle to explain and influence exactly how transformational leaders produce such positive outcomes among their followers. In response, the boundary conditions and mechanisms through which transformational leaders foster positive employee work outcomes has become a growing source of interest in the leadership research community (Aryee, Walumbwa, Zhou, & Hartnell, 2012; Avolio et al., 2009). This movement has been echoed in the education field as well, with researchers acknowledging the additional need for understanding mediating and moderating variables (Hallinger & Heck, 1996; Leithwood & Jantzi, 2000).

Thus, research in transformational leadership still has short-comings; namely, the lack of research on the theoretical mechanisms explaining how transformational leadership positively influences follower outcomes. To this end, I propose a theoretical framework that incorporates psychological states (psychological meaningfulness, psychological safety, and self-efficacy) as an underlying psychological mechanism that explains the positive impact transformational leaders have on follower outcomes in the educational context.

Transformational Leadership in the Educational Context

Leadership has been a consistent theme in the educational context over the last few decades (Little, 2003), with researchers increasingly drawing upon literature in the organizational sciences to explain the relationship between teachers' instructional approaches

and educational outcomes (Pounder, 2006). However, the appropriateness of applying transformational leadership, an organizational phenomenon, to the educational context must be justified (Kuchinke, 1999). Therefore, I first discuss the conditions under which the university classroom may be perceived as a quasi-organization (e.g., Cheng, 1994; Weaver & Qi, 2005) and second, discuss the conceptual parallels between leaders and teachers (e.g., Baba & Ace, 1989; Chory & McCroskey, 1999; Harvey, Royal, & Stout, 2003; Pounder, 2008; Walumbwa, Wu, & Ojode, 2004).

Classrooms as Quasi-Organizations

In their classic work, Katz and Kahn (1978) proposed that the defining characteristic of organizations is the consistent pattern of human behavior, within the organization, designed to achieve a formal goal. This conceptualization encapsulates many types of organizations, including non-business settings such as government agencies, non-profit organizations, and universities (Jex, 2002). Using Katz and Kahn's concept as a framework, classrooms in universities can also be considered quasi-organizations. The behaviors of students and faculty members or teachers are consistent: students attend class, take notes, and must demonstrate their knowledge; faculty members create class content, give lectures, and assess the knowledge of their students. Additionally, students and faculty members behave in ways designed to achieve the common goal of student learning. Student learning as a formal goal is supported by the behaviors of both faculty members and students: tasks and goals are specified, rules are stated, and the status relationship between teacher and student is outlined (Weaver & Qi, 2005).

Teachers as Leaders

Furthermore, the difference in status and power between students and teachers is conceptually similar to the difference between status and power between organizational leaders

and their followers. Though not perfectly parallel, the underlying similarities merit discussion (Kuchinke, 1999). In the education literature, "teachers as leaders" is a familiar concept and has been studied within varying leadership frameworks (see Pounder, 2006 for a comprehensive review of the development of the teaching leadership research). Both teaching and organizational leadership are characterized by differences in the status between leaders and followers (Harrison, 2011). These power differences are demonstrated by the reward, coercion, expertise, and referent bases of power (Raven & French, 1958) and can be found in both teaching and organizational contexts. In addition, the relationship parallels between teachers and organizational leaders are both characterized by complex interactions involving communication, control, and coordination of activities (Kuchinke, 1999).

The teachers as leaders and organizational leadership research have begun to converge; both streams of research have started focusing on leaders developing the skill sets of their followers, as opposed to directing or coercing follower behavior. Historically, teachers were viewed as content experts who were expected to communicate class material (Harrison, 2011). However, the merging of educational and organizational literatures (e.g., Pounder, 2006) has developed the conceptualization of teachers as agents of change and student development (Bolkan & Goodboy, 2009; Harrison, 2011), which is similar to conceptualizations of transformational leaders as catalysts for follower development. Organizational psychologists, such as House and Podsakoff (1994), further bridge the organizational and educational leadership literatures by highlighting the transformational role of instructors, explaining that university instructors have the potential to influence students, shape their students' personal and professional development, and help students focus on specific tasks. Furthermore, they explain that the manner in which teachers facilitate these goals is similar to the way in which

organizational leaders influence, initiate, focus attention, set direction, and coordinate activities toward a goal. The consistent finding of this literature is that leadership theories, especially transformational leadership, are applicable to educational instruction (Harrison, 2011; Pounder 2006).

Beyond the general similarities in teaching and organizational leadership, other parallels have been identified between educational transformational leadership and organizational transformational leadership (e.g., Baba & Ace, 1989; Barling et al., 2011; Bolkan & Goodboy, 2009; Harvey et al., 2003; Pounder, 2006). The four dimensions of transformational leadership (idealized influence, individualized consideration, inspirational motivation, and intellectual stimulation) provide a framework within which to understand educational transformational leadership. Teachers who display each dimension should positively influence student behaviors, perceptions, and learning outcomes (Bolkan & Goodboy, 2009), though these relationships have yet to be assessed using an experimental research design.

Transformational Leadership in Education Advances Organizational Literature

In addition to the insights that studying transformational leadership can bring to the educational context, using the educational context to study transformational leadership also advances the organizational science literature. First, studying transformational leadership within the educational context allows for a more "pure" study of engagement; that is, there are potentially fewer intervening variables than one might find in an organization. For example, there is less potential for relationships to be nested within one another (e.g., the relationship between employees and supervisors are often nested within the relationship between those supervisors and *their* supervisors; Tangirala, Green, & Ramanujam, 2007); there is a formal power structure in place between students and teachers; and students typically have only one

teacher per class (i.e., they do not have multiple supervisors for a given class, though there are exceptions). These differences between organizational industry and educational settings allow for more control when conducting research, which can strengthen the internal validity of transformational leadership studies.

Second, studying transformational leadership in the educational context can allow for a methodological advantage rarely seen in organizational samples: experimental research design. Research in organizations is typically limited by the organization's own time and monetary constraints. As a result, organizations typically do not want to devote time and resources to a project that is not clearly and well-established to be of great benefit. Hence, there are few experimental studies conducted in organizations, especially leadership experiments (see Barling, Weber, & Kelloway, 1996, for a rare exception). Conversely, the education context can provide the opportunity for experimental research designs because colleges and universities have increased their focus on the scholarship of teaching, though much more is necessary (Kreber, 2005). This focus and resulting willingness to use research for education presents an opportunity for leadership researchers who can help create teaching interventions from which the university benefits, while also carrying out a rigorous research design that allows for the manipulation of leadership as an independent variable. Thus, the research not only serves to answer an important question for the scholarship of teaching, but serves as a teaching tool in and of itself, thereby directly supporting the educational mission in more ways than one.

Lastly, the third way in which an educational context can advance the organizational leadership research agenda is by understanding how leadership functions across contexts. For example, in their meta-analysis, Judge and Piccolo (2004) found that military and organizational settings had different validities for transformational leadership, which suggests that

transformational leadership functions differently in different contexts. By providing another different, yet relevant, context in which transformational leadership can be studied, this study framed within the educational context can advance and extend organizational knowledge of transformational leadership by informing the field of boundary conditions.

The Lack of Specific Behaviors

Despite the parallels between teaching and organizational transformational leadership and the potential contributions of each context to the other, a strong application of Bass' (1985) four-part framework is still missing. Many researchers describe the dimensions using, at best, very broad behaviors (e.g., "acknowledges personal needs" or "demonstrates integrity"). The importance of transformational leadership behaviors is also discussed in a general sense (e.g., "promote critical thinking" or "promote participative decision-making"), but again, no concrete, behavioral suggestions are offered for how teachers can implement transformational leader behaviors in their own classrooms (e.g., Harrison, 2011; Pounder, 2003). For example, if a teacher wants to become an inspirational motivator to his or her students, how exactly does he or she begin to demonstrate integrity? How would he or she know if that behavior was a reflection of inspirational motivation and whether it was effective? Although the vagueness with which transformational leadership is referred to may serve as a useful starting point, the lack of specificity of behaviors makes it hard for individuals to implement and for training leaders in transformational leadership behaviors. Without research providing theoretical and empirical support for specific and actionable behaviors, teachers (and arguably all leaders) are left to guess which behaviors would positively influence student perceptions. Unfortunately, this gap is the current reality of the field.

One notable exception in the education literature is Bolkan and Goodboy's (2011) inquiry into college professors' transformational leadership behaviors (though other examples do exist; e.g., Kirby, Paradise, & King, 1992). Using narratives from undergraduate students, Bolkan and Goodboy identified specific behavioral applications of transformational leadership (conceptualized into three dimensions: charisma, individualized consideration, and intellectual stimulation). Examples of transformational teacher behaviors from their study include expanded and flexible office hours, learning and using student names in class, and making course content relevant to students' lives. However, despite the thorough exploration of transformational leader behaviors, there are two main disadvantages to Bolkan and Goodboy's study. First, they only considered three dimensions of transformational leadership, including charisma, which is not a traditional dimension in transformational leadership research (Bass, 1985; Bass & Riggio, 2006). Second, Bolkan and Goodboy's list of transformational leadership behaviors is limited to what students reported. That is, the leadership behaviors reported were retrofitted into the authors' transformational leadership framework. Hence, one cannot conclude that the authors' final list is fully representative of the transformational leadership dimensions. In addition, although their qualitative approach is an excellent example of exploratory research, it does present the need for a more systematic approach to creating transformational teacher behaviors. Aside from Bolkan and Goodboy's study, as well as a handful of others (e.g., Kirby et al., 1992), the application of transformational leadership in the educational context has focused on empirical relationships (predominantly correlational) between transformational leadership and student outcomes (e.g., Harrison, 2011; Harvey et al., 2003; Pounder, 2008).

Transformational Teachership: A New Model

To address the lack of attention to the specific behaviors of transformational leadership, I synthesize and expand the educational transformational leadership framework to incorporate specific behaviors. I apply each transformational leadership dimension to the educational context and provide specific behaviors that teachers can implement, creating a new model of "Transformational Teachership." Additionally, I draw on previous research (when available) and supplement it with new, proposed behaviors.

Idealized Influence: Specific Behaviors

Idealized influence focuses on transformational leaders' commitment to followers, treating their followers with respect and kindness, their integrity, and creating a shared mission (Bass, 1985; Bass & Riggio, 2006). In the classroom, transformational teachers can demonstrate idealized influence behaviors by conveying enthusiasm, caring, and respect for students. To convey enthusiasm, teachers can smile during class (Guerrero & Miller, 1998), provide interesting examples, and vary their tone of voice throughout class (McKinney, Larkins, & Burts, 1984). Other behaviors that teachers can use to demonstrate enthusiasm include using appropriate humor (Garner, 2013), using appropriate and relevant personal disclosure (for example, sharing a not-too-revealing story that relates to the subject matter; Bolkan & Goodboy, 2011; Gorham, 1988), and showing appreciation of the role students play in creating a positive learning environment (e.g., class participation; Gorham, 1988). Enthusiasm has been linked to intrinsic motivation in learners (Patrick, Hisley, & Kemper, 2000) and frequency of on-task behaviors (i.e., less likely to become distracted during lecture; Bettencourt, Gillett, Gall, & Hull, 1983). One way that enthusiasm may lead to increased perceptions of idealized influence is through attentional processes, wherein enthusiastic teacher behaviors captivate an audience and

hold their attention (Bettencourt et al., 1983), which helps the inspirational motivational behaviors become more salient to students.

To convey caring, teachers can express empathy when responding to student concerns (both in person and via electronic communication). This may include demonstrating concern when students report being sick, having personal issues, or are struggling with the class material (Bolkan & Goodboy, 2011; Delaney, Johnson, Johnson, & Treslan, 2010). Research shows students' perceptions that their teachers care about them is associated with positive teacher evaluations (Teven & McCroskey, 1997) and perceived teacher credibility (Teven & Hanson, 2004). Furthermore, teachers can be taught to communicate in such a manner that fosters student perceptions of caring (McCroskey, 1992). To convey respect, teachers can accept and appreciate questions, even seemingly simple questions. In contrast, making students feel foolish or insecure about their ability to contribute to class discussion undermines the spirit of idealized influence. The relationships between caring and respect with idealized influence may be understood in terms of rapport, which is the level of relatedness felt between participants in an interaction (Gremler & Gwinner, 2000). Professor–student rapport is positively associated with student learning (Murray, 1997). Furthermore, students who perceive positive rapport with their professor report enjoyment of class material and of the instructor (Benson, Cohen, & Buskist, 2005). That is, building rapport influences students' perceptions of both the class and the instructor. Hence, by building rapport with behaviors that demonstrate caring and respect, teachers can potentially enhance student perceptions of idealized influence.

To enact the integrity component of idealized influence, teachers can create clear and transparent course policies (e.g., Palanski & Yammarino, 2007), such as what happens when coursework is late or class is missed, and implement those policies fairly. In addition, teachers

should take ownership when they make mistakes (Bolkan & Goodboy, 2011). For example, giving students credit when a test question is poorly written and results in several students misunderstanding the question, or when there is confusion over a due date or assignment because it was not clearly posted. One way that integrity may lead to perceptions of idealized influence is through trust, which is essential to the leader-follower relationship (Bartram & Casimir, 2007). Trust can be defined as a willingness to depend on another party (Mayer, Davis, & Schoorman, 1995) and has been shown to promote follower perceptions of reverence and esteem for their leader (i.e., idealized influence; Conger, Kanungo, & Menon, 2000).

In addition to conveying enthusiasm, caring, respect, and integrity, teachers can provide a sense of mission by establishing course goals (Bolkan & Goodboy, 2011), which should be stated in the syllabus, on the first day of class, and throughout the semester. Those course goals should be supplemented with specific learning goals for each class, as well as reminders for how the course might tie into the personal and professional goals of students (Robinson, Lloyd, & Rowe, 2008). By taking time out of class to set goals and make the class mission more salient, transformational teachers establish a shared vision with students. Recent research has shown that shared vision is an important attribute for leaders to possess (e.g., Kouzes & Posner, 2009).

Individualized Consideration: Specific Behaviors

In the second dimension of transformational leadership, individualized consideration, leaders pay special attention to the differing needs of their followers (Bass, 1985; Bass & Riggio, 2006). In the classroom, teachers can demonstrate individualized consideration through personalized contact, adapted class content, and availability to students (Bolkan & Goodboy, 2011). First, personalized contact can include teachers learning their students' names, sending them individualized emails (perhaps congratulating them on a job well done or providing them

with encouragement or resources after failing an exam; Isbell & Cote, 2009), and conveying interest in students personal lives (e.g., asking how they are doing, if they are stressed). The positive effect of personalized contact can likely be explained through changes in student perceptions of anonymity, a common sentiment for students in medium to large classes (e.g., Davis, 2001; Forsyth, 2003; McKeachie, 1999). When students feel anonymous to their teachers, they perceive a lack of personal connection and may have trouble becoming motivated to learn (McKeachie, 1999). By initiating personalized contact, teachers can reduce students' perceptions of anonymity and positively influence their perceptions of their teacher as a transformational leader.

Second, adapted class content is the result of soliciting feedback from students and making adjustments accordingly (Bolkan & Goodboy, 2011). It is worth mentioning here that there are natural boundaries to adjusting class content based on student feedback. Students may desire course changes that are not beneficial to their learning, but make the course easier for them to complete (Bailey, 2000). Having said that, there are many opportunities for teachers to successfully incorporate student feedback, such as increasing the use of examples, changing the pace of lecture (if it is too fast or too slow), or reorganizing slides. Research has supported the positive gain in student perceptions when teachers solicit feedback; teachers who incorporate student feedback throughout the semester receive positive evaluations (Porcano, 2011; see Cohen, 1980 for a meta-analysis). Other applications of adapted class content could include using pre-lecture assessments to drive class content. For example, teachers could use the results of pre-lecture activities to identify areas of weakness or confusion among students, and then adapt their lecture materials to elaborate or more fully explain those concepts that students found puzzling (Berrett, 2012; Novak, 2011). By adapting the class content to the needs of the students,

teachers are demonstrating the unique needs of each class and the students in those classes (i.e., individualized consideration).

Finally, availability refers to the extent to which students have the opportunity to meet with their instructors outside of class (Bolkan & Goodboy, 2011). When outside the formal class setting, students may be more likely to share individual concerns or other issues affecting their performance in class. Behaviors in which teachers can engage include increased office hours, appointments outside of office hours, and review sessions. Bolkan and Goodboy (2011) found that teachers who emphasized office hours or allowed appointments outside of formal office hours were likely to be seen as transformational teachers by their students. In addition, teachers can demonstrate individualized consideration by offering informal review sessions that allow students to ask their own questions and can focus on the areas students are struggling with (as opposed to a formal review session that covers the gamut of class content without consideration to student learning needs).

Inspirational Motivation: Specific Behaviors

Inspirational motivation refers to how transformational leaders encourage their followers to perform above their own expectations and to maximize their potential (Bass, 1985). Educational leaders who demonstrate inspirational motivation should be a source of help, optimism, and encouragement for students' personal and academic development. Transformational teachers set difficult but realistic goals for their students and convey to students their belief that students can meet those goals. Transformational teachers help students by explaining and re-explaining concepts when necessary and focusing on learning goals, which tend to foster intrinsic motivation, versus performance goals (Barron & Harackiewicz, 2001; Miller, Greene, Montalvo, Ravindran, & Nichols, 1996).

Transformational teachers can convey their optimism for students' learning and performance by reassuring students before each exam (e.g., taking time to say "I know you have studied for this exam, you have been in class taking notes, and you have worked hard to learn the material. I know you can do this"). After results of the exam are known, transformational teachers can encourage poorly performing students to persist even though they might feel defeated, and they can offer resources for help or support. By focusing on improvement and development instead of failure, transformational teachers can promote a mastery orientation, which has been linked to positive attitudinal and performance outcomes (e.g., Ames & Archer, 1988; Dweck, 1986).

In addition to focusing on student learning and development, transformational teachers set high goals and expectations for their students, challenging them to perform better on papers, exams, and other class requirements than they have in the past. Behaviorally, this might include having students write down a developmental learning goal or the teacher creating a goal for the entire class (e.g., creating a goal to increase the class average on the next exam). Importantly, these goals do not have to be performance based. A non-performance based goal the teacher might set for the class is to have everyone participate at least once throughout the semester. Through these challenges, transformational teachers treat students as capable, intelligent, and responsible adults, providing the context for the self-fulfilling prophecy (Merton, 1948), wherein an individual's prediction affects the likelihood of that outcome becoming true (either directly or indirectly). By treating students as if they will succeed, students are more likely to succeed (Brophy, 1983).

Intellectual Stimulation: Specific Behaviors

Lastly, the fourth dimension of transformational leadership, intellectual stimulation, refers to the way in which leaders enhance the critical thinking of their followers by encouraging them to think for themselves, question their assumptions, and approach problems in innovative ways (Bass, 1985; Bass & Riggio, 2006). Transformational teachers can demonstrate intellectual stimulation by using interactive teaching methods that are personally relevant, encouraging students to think independently, challenging their assumptions, and providing learning opportunities for students to practice their new skills (Bolkan & Goodboy, 2011).

Specifically, transformational teachers have a variety of teaching tools upon which they draw to promote active learning including videos, songs, class demos, and in-class activities, and they incorporate class discussion and participation when feasible and appropriate (e.g., Bonwell & Eison, 1991). In addition, transformational teachers ensure that activities and examples are relevant to their student audience (Bolkan & Goodboy, 2011). For example, if the class content was centered on different types of leadership styles, the teacher could ask students to draw from their own experiences of different types of leaders they have worked with and then have them assign leadership styles learned in class to each leader they listed. By using an interactive approach and examples that are meaningful or personally relevant to students, transformational teachers draw students into the content and provide them with a multitude of personalized ways to interact with the content material. These behaviors are based on the self-referential effect, wherein the retention of information is improved when the information being processed relates to the person (Rogers, Kuiper, & Kirker, 1977). By making the examples and activities relative to students, transformational teachers can improve the way students process and retain that information (e.g., Moreno & Mayer, 2000).

Transformational teachers also promote intellectual stimulation by creating difficult (yet doable) in-class activities and exams, requiring students to support opinions and statements with evidence, and asking follow-up questions during class discussions (Bolkan & Goodboy, 2011). These challenges should force students to stretch their intellectual models, requiring them to synthesize, understand, or explain material in new ways. Within these challenges, the transformational teacher can also encourage students to think independently instead of relying on them for answers. For example, such behaviors could include asking students to come to their own conclusions, not providing the answer to every question, asking students first what they think before giving hints, or encouraging students to look up answers to their own questions (Bolkan & Goodboy, 2011).

Finally, transformational teachers provide students with many opportunities to try out new skills. These opportunities should be low risk (i.e., worth small amounts of points) and require application of the material. These opportunities might include small, low risk quizzes (e.g., students can take the quiz multiple times to receive the highest possible score), in-class activities that apply the material, i-clicker questions (questions posed to the class where responses are electronically recorded via remotes, often called i-clickers), or mini-writings where students respond to a prompt about the class concept by writing. No matter the format, the purpose of the activities is to allow students to grapple with the material without the fear of failure or embarrassment (e.g., Ames, 1992). Practicing and learning material in a low risk setting promotes a mastery orientation learning approach (Ames, 1992), which is related to positive student learning outcomes such as performance, motivation, and cognitive engagement (e.g., Meece, Blumenfeld, & Hoyle, 1988; Wolters, 2004).

Each of the leadership dimensions above has the potential to contribute to student perceptions of transformational teachership (e.g., Bolkan & Goodboy, 2011; Pounder, 2008). By creating specific and actionable behaviors that are grounded in transformational leadership theory, I have created a pool of behaviors from which transformational teacher training programs can draw. In the next section, I describe what these training programs may look like.

Training Transformational Leaders and Teachers

The question of whether or not leaders are born or made has been a consistent theme throughout the history of leadership research (Barling et al., 2011). As Barling et al. relate in the development of the leadership literature, early researchers initially believed leaders were born with an innate predisposition for leadership; that leaders possess desirable personality traits that are relatively stable over time and not very amenable to change and development. As the field progressed, researchers increasingly theorized that leadership was actually malleable; individuals could learn a set of behaviors that made them a good leader (e.g., Bass 1990). As transformational leadership emerged in the organizational science literature, researchers began testing the efficacy of leadership training programs, though very few published rigorous tests exist (see Barling, Weber, & Kelloway, 1996 for an exception). In the educational literature, there are no tests of transformational teaching programs, despite calls for such studies (Bolkan & Goodboy, 2011; Harvey et al., 2003). To this end, I review relevant literature on leadership training programs and outline the efficacy of such leadership training programs.

Despite the small number of studies actually manipulating transformational leadership as an independent variable (Barling et al., 2011 cite only four studies that use adequate levels of methodological rigor), there is a growing body of evidence that suggests transformational leadership is a skill that can be developed (Kelloway & Barling, 2000). In the seminal

transformational leadership training study by Barling et al. (1996), the researchers randomly assigned transformational leadership training to a series of bank managers in geographically separated branches. Nine branch managers served as the experimental group and eleven branch managers served as the control group. Though the researchers did not share specific behaviors, the managers in the experimental group received one full day of transformational leadership training, followed by a second day of individualized coaching. During the second day, participants in the experimental group reviewed results from a recently completed 360 feedback assessment and set goals for improving transformational leadership behaviors. After the initial training, four follow-up sessions were held to support the transformational leader training. During the follow-up meetings, participants reviewed their goals and feedback from followers on their transformational leadership behaviors. The participants in the control group received no training or counseling sessions. Using pre-tests and post-tests to assess changes as a result of the leadership training program, Barling et al. found that not only did followers of the trained leaders report their leaders as being more transformational than before the training, but that organizational commitment and performance of followers also increased.

Since Barling et al.'s (1996) study, other researchers have found similar evidence in support of the efficacy of transformational leadership training programs (e.g., Dvir, Eden, Avolio, & Shamir, 2002; Kelloway, Barling, & Helleur, 2000; Mullen & Kelloway, 2009). Each transformational leadership program included the following components: leaders in formal positions of power, an initial training session followed by smaller "booster" sessions, setting goals for specific transformational behaviors, and some type of feedback or goal monitoring.

To date, there have been no studies in the education literature that have manipulated transformational leadership as an independent variable, despite the abundance of research linking

transformational leadership to desirable student outcomes. Therefore, one goal of the proposed study is to incorporate the specific behaviors I outlined in transformational teachership into a new training program adapted for the teacher-student context. Using the transformational teacher behaviors proposed in the previous section, I suggest that teachers who implement those behaviors will increase follower (student) perceptions that they are transformational and those teachers will be perceived as more transformational than teachers who do not receive the transformational leadership training.

Hypothesis 1a: Students of the teachers who receive training report a significant increase in observed transformational teaching behaviors.

Hypothesis 1b: Teachers who implement transformational teachership behaviors receive higher ratings on transformational leadership than those who do not.

Transformational Leadership and Student Engagement

Transformational leaders are thought to stimulate the desire among followers to exceed traditional expectations (Seltzer & Bass, 1990). If transformational leadership works similarly in classrooms as it does in organizations, one can expect that student outcomes will be similarly affected or influenced as are employee outcomes. In this study, I focus on engagement as a key student outcome.

The rise of student engagement as a strategic construct for institutional assessment, accountability, and improvement efforts has been a consistent theme in higher education over the last decade (Kuh, 2009). An emerging consensus in educational research is that student engagement is a critical goal for educational institutions. Indeed, many educational institutions include student engagement in their mission statement (e.g., Miami University, Gonzaga

University, and University of San Francisco) or participate in national benchmarking surveys for student engagement (e.g., the National Survey of Student Engagement; Kuh, 2009).

However, despite the popularity of the construct, there is little agreement on exactly what it means for students to be engaged. Some studies have focused on students' use of cognitively complex strategies, referred to as cognitive engagement (e.g., Meece et al., 1988), yet others have focused on engagement as the amount a student studies or practices a subject (Carini, Kuh, & Klein, 2006). To further complicate the issue, some studies assess engagement at the macro level (e.g., engagement in college/university as whole; Kuh, 2003), whereas others assess engagement at a very micro level (engaged in very specific tasks such as reading; Guthrie & Alvermann, 1999). Taken as a whole, the student engagement literature has conceptual and measurement inconsistencies that are problematic for research and application (Handlesman, Briggs, Sullivan, & Towler, 2005).

Employee Engagement in Organizational Science

Organizational science has a parallel construct, employee engagement, which provides a strong theoretical and empirical foundation upon which student engagement research can draw, though has not as of yet. In the organizational context, employee engagement concerns the degree to which individuals immerse themselves in their work, to the point they are cognitively, physically, and emotionally invested in their work role performance (Kahn, 1990). Engagement is considered a motivational state in which employees are driven to fully express themselves in their work role. When applied to the educational setting, I propose that student engagement can be conceptualized similarly: engaged students are those who are cognitively, physically, and emotionally immersed in their class and coursework (i.e., students are not only engaged during class, but also during homework, studying, or other school related tasks). This definition extends

previous definitions of student engagement, such as Astin's (1984) definition of student involvement (which he later renamed engagement) as "the amount of physical and psychological energy that the student devotes to the academic experience" (p. 297).

In addition to the conceptual support that the organizational literature base can provide in refining the definition of student engagement, organizational researchers have demonstrated the utility of engagement. For example, organizational researchers have found positive relationships between engagement and job satisfaction (Koyuncu, Burke, and Fiksenbaum, 2006), performance (Rich, LePine, & Crawford, 2010), extra effort (e.g., organizational citizenship behaviors; Moliner, Martinez-Tur, Ramos, Perio, & Cropanzano, 2008), organizational commitment (Richardsen, Burke, & Martinussen, 2006), and firm productivity (Harter, Schmidt, & Hayes, 2002). The student engagement literature reflects similar findings with student engagement positively related to performance (i.e., student grades; Handelsman et al., 2005), critical thinking (Carini, Kuh, & Klein, 2006), extra effort (Pounder, 2008), satisfaction with instructors (Walumbwa et al., 2004), and mental and physical well-being (Steele & Fullagar, 2009). Essentially, both literatures demonstrate the importance of engagement, regardless of its specific form, relative to individual attitudes, behaviors, and performance.

With such robust findings on the positive relationship between engagement and student outcomes, many higher education institutions are interested in increasing levels of student engagement (Kuh, 2009). However, despite the interest in increasing engagement, there has been little theoretical development in the student engagement literature in understanding the underlying processes for fostering engagement. This has led to few systematic, theoretically grounded approaches to student engagement. Furthermore, the lack of theoretical development is detrimental to both researchers and teachers, because many interventions draw from theoretical

frameworks and reciprocally, those interventions provide feedback for advancing theory. Practically, if we do not understand the process of *how* students become engaged, we cannot systematically address factors that could potentially improve the engagement process. Therefore, to contribute to the transformational leadership and student engagement literatures, I propose an application and extension of employee/organizational engagement.

Student Engagement Framework

Based on Hackman and Oldham's (1976, 1980) and Kahn's (1990) idea that psychological states (felt responsibility, experienced meaningfulness, and knowledge of results) mediate the relationship between aspects of the work environment and job outcomes (e.g., motivation, performance, satisfaction), I propose a similar model of psychological states that influence student outcomes, such as student engagement, performance, and satisfaction.

Kahn (1990) proposed that for employees to become engaged, they must experience three psychological states: perceived psychological meaningfulness (employees feeling worthwhile and valuable for the work that they do), psychological safety (how secure individuals feel expressing their preferred self), and psychological availability (having the physical, emotional, and psychological resources to become engaged). He proposed that to the varying degrees that employees experience each one of these states, they become more or less engaged in their jobs. He also hypothesized that leaders have the potential to influence perceived psychological safety. He did not similarly theorize the role of leadership in the other critical psychological states. However, other researchers have suggested that leadership plays an integral role in employee engagement (e.g., Harter et al., 2002; May, Gilson, & Harter, 2004; Xu & Thomas, 2011) and that Kahn's proposed critical psychological states can be influenced by leader characteristics. Thus, leaders can promote feelings of psychological meaningfulness, psychological safety, and

psychological availability (e.g., Hobfoll, Johnson, Ennis, & Jackson, 2003; Schaubroeck, Lam, & Peng, 2011; Sparks & Schenk, 2001).

However, Kahn's model may not fully capture the variance in student engagement. For example, Kahn includes perceived psychological availability as a psychological state that influences engagement. However, research has shown a weak link between psychological availability and engagement (e.g., May et al., 2004). Furthermore, perceived psychological availability has many influences, including work and non-work factors (e.g., a sick family member, financial issues, legal issues; Kahn, 1990). As a result, the multi-source nature of psychological availability may make it difficult for leaders to influence. That is, it is not an easily altered condition, therefore reducing its relevancy in explaining how to improve engagement. In addition to the poor fit of availability, it is possible there are other psychological states, ones that are more malleable by leaders and relevant to engagement, such as self-efficacy. To this end, I propose a new model of critical psychological states including psychological meaningfulness, psychological safety, and self-efficacy. Focusing on how each state relates to student engagement, I also discuss how transformational teachership can be expected to positively impact each psychological state.

Psychological meaningfulness. The first psychological state proposed by Kahn (1990), meaningfulness, refers to employees feeling worthwhile and valued for the work that they do, and that their work makes a difference. As a psychological state, meaningfulness can also apply to the educational context, in that students want to experience meaningful school work that makes a difference in their personal and professional development. Transformational teachers have the opportunity to influence their students' perceptions of psychological meaning. Indeed, one of the most powerful influences a leader can have on followers is in the "management of

meaning" (Smircich & Morgan, 1982), suggesting that leaders help to define and shape the perceptions of their followers. One way that transformational leaders can influence the psychological meaningfulness of their followers is by articulating visions that are appealing to followers (via inspirational motivation; Bass, 1985). When students understand how their coursework and assignments directly relate to the course objective, they can appreciate the value of their own work and experience more psychological meaningfulness.

The relationship between transformational leadership and perceived psychological meaningfulness can be explained in two ways; through perceived task characteristics and through social information processing (Salancik & Pfeffer, 1978). Both approaches are based on the premise that individuals' perceptions of their work are not completely dependent on the objective characteristics of the work (e.g., Piccolo & Colquitt, 2006; Wrzesniewski & Dutton, 2001; Salancik & Pfeffer, 1978). That is, transformational leaders positively alter followers' perceived meaning of work by altering their perceptions of that work. The transformational leader's influence on work meaning is consistent with Kahn's (1990) proposed antecedents to psychological meaningfulness, which included task characteristics, role characteristics, and work interactions. To explain the role of task characteristics, Kahn (1990) drew on job characteristics theory (JCT; Hackman & Oldham, 1980), which proposes that core aspects of the job influence critical psychological states, such as experienced meaningfulness. Kahn found that when tasks were challenging, clearly delineated, varied, creative, and somewhat autonomous, individuals were more likely to experience psychological meaningfulness. However, these task characteristics are not completely objective. Researchers have shown that leaders have the potential to positively influence the perceptions of task characteristics (Piccolo & Colquitt,

2006). Hence, transformational leaders influence perceptions of job characteristics, which then influence psychological meaningfulness.

For students, the role of JCT in explaining the impact of transformational leadership on perceived psychological meaningfulness is relevant. Students attend class, complete assignments, and take exams, all of which are tasks that can be considered within the framework of JCT. As with work tasks, these school tasks can vary in their degree of challenge, creativity, and autonomy. In turn, student perceptions of task characteristics likely influence their perceived psychological meaningfulness. Therefore, transformational teachers can influence the perceived psychological meaningfulness students experience via the design of class assignments. For example, transformational teachers might consider developing class activities that allow students to be creative and autonomous, such as encouraging students to apply class content in their own way (e.g., creating a board game as a review guide, writing a fictional story based on concepts from class, creating a video that illustrates course material). However, as with employees, it is not just the characteristics of the task that matter, but also the way tasks are communicated that influence perceived meaningfulness.

While investigating the influence of interpersonal interactions on psychological meaningfulness, Kahn (1990) found that interpersonal connections were an invaluable source of psychological meaning. To explain these findings, I draw on social information processing theory (Salancik & Pfeffer, 1978), which highlights the important role that social context plays in influencing an individual's perceptions. Specifically, employees develop attitudes through processing information from the social environment, which can include the leader (based on Festinger's Social Comparison Theory, 1954). Transformational leaders can serve as an important source of social information that followers use to construct and interpret events. There

are several ways that social information influences individual perceptions (Salancik & Pfeffer, 1978), two of which are noteworthy here. First, individuals in complex jobs may be more susceptible to social information because of the complex stimuli to which they are exposed; social information gives them an idea of how to react to such complex stimuli. Second, social information guides an individual's attention processes, making some aspects of the environment more salient than others. By drawing attention to certain aspects of the task or work, social information influences the perceptions of individuals.

Both ways described above, in which social information in the environment affects employees, are noteworthy in explaining how the interpersonal relationship between transformational leaders and employees influence employees' perceived meaningfulness. The same explanation can operate similarly in the teacher-student relationship. Specifically, the requirements of college level classes can be complex, requiring students to complete activities outside of class that necessitate time management, taking organized notes from sometimes disorganized teachers, studying for difficult exams, and writing papers based on ambiguous directions. In classes that have multiple components (e.g., tests, quizzes, homework, papers, group projects, in-class activities, labs), students may have ambivalent feelings towards the class in general, and are therefore more open to social information from the teacher about the class. As a result, transformational teachers can help students process the different class components and point out the value and purpose of each assignment. In addition, transformational teachers can influence students' perceived meaningfulness by making the positive and developmental aspects of class work more salient. Teachers can draw attention to the learning opportunities and describe them as developmental challenges rather than insurmountable hurdles (consistent with intellectual stimulation and inspirational motivation). By highlighting the positive characteristics

of assignments and class work, transformational teachers can enhance the perceived psychological meaningfulness of their students. Furthermore, through fostering an interpersonal connection via idealized influence and individualized consideration, the transformational teacher can promote students' perceived meaningfulness of coursework and the class in general.

Hypothesis 2: Transformational teachership positively relates to psychological meaningfulness.

In addition to the effect that transformational leadership has on psychological meaningfulness, psychological meaningfulness in turn influences student engagement. One way to understand the mediating role of psychological meaningfulness between transformational leadership and engagement is through expectancy theory (Vroom, 1964). Students devote time, energy, and emotion to their school work and likely want to feel the "return on investments" that Kahn (1990, p. 703) describes employees desire. Consistent with expectancy theory (Vroom, 1964), students' perceived instrumentality that they can achieve their desired goal (in this case probably a good grade) and expectancy that their hard work will pay off, combine to influence their motivation. Thus, when students feel that their investments have been worthwhile, they feel engaged (i.e., a motivational state) in their course work. However, leaders can alter follower perceptions of instrumentality and expectancy (Isaac, Zerbe, & Pitt, 2001), likely through perceived meaningfulness. That is, instrumentality, valence, and expectancy can be altered by an individual's perceptions. To improve perceptions of instrumentality and valence among their followers, leaders can provide challenging yet feasible goals, treat followers fairly, and communicate alignment between personal goals and organizational goals (Isaac et al., 2001).

In the classroom, transformational teachers can enhance perceptions of meaningfulness, and ultimately expectancy, valence, and instrumentality by creating assignments and tests that

are difficult yet reasonable, creating course policies that are transparent and well documented, and reminding students of the overall purpose of assignments (e.g., reminding students that a paper is not assigned merely for the sake of giving students a grade, rather it is a developmental tool so that students learn important skills such as critical thinking, effective communication, and research skills).

In summary, transformational leadership influences meaningfulness, which in turn influences student engagement through expectancy theory (Vroom, 1964). However, despite the influence of leaders on followers' perceived expectancy, instrumentality, and valence, individual differences influence these perceptions as well (e.g., achievement-motivation; Wigfield & Eccles, 2000). In addition, there are likely other mechanisms that explain why transformational leadership may positively impact engagement, such as job characteristics, which would preclude psychological meaningfulness from fully mediating the relationship (e.g., Aryee et al., 2012 found evidence for partial mediation). Therefore, it is unlikely that meaningfulness will fully mediate the relationship between transformational leadership and student engagement. Hence, I argue for partial mediation.

Hypothesis 3: Psychological meaningfulness partially mediates the relationship between transformational teachership and student engagement.

Psychological safety. The second psychological state, psychological safety, refers to how secure individuals feel expressing their preferred self (Kahn, 1990). That is, if individuals sense that there will be negative consequences for expressing themselves, such as damage to self-image, reputation, or career, they are less likely to feel psychologically safe, and therefore less likely to personally engage. These considerations are likely true for college students as well, who may be concerned about their reputation or how their classmates and teachers perceive them

(e.g., Gilovich, Savtisky, & Medvec, 2000). College students, in particular, may feel the need to be psychologically safe, as the "spotlight effect" (wherein individuals overestimate the extent to which their actions and appearance are noted by others; Gilovich et al., 2000) is still experienced in the college years (typically 18-23 years of age). The spotlight effect can exacerbate fears of social evaluation due to the perception that everyone is watching (Epley, Savitsky, & Gilovich, 2002), which can lead to negative self-evaluation (Brown & Stupa, 2007) and social anxiety (Gilovich, Kruger, & Medvec, 2002). In the classroom, the spotlight effect may make students especially sensitive to the role of teachers in making the class feel like a safe environment, where students can ask questions, participate in class discussions, and share opinions without fear of harming their self-image or being criticized in public.

Kahn (1990) proposed that when leaders are supportive, have clear and consistent expectations, and are resilient (do not take questions, comments, or concerns as personal attacks), followers are likely to perceive psychological safety. Transformational leaders can add to feelings of psychological safety by treating each subordinate as an individual with her or her own unique needs (individualized consideration) and focusing efforts on the long term well-being of the employee (not just short term outcomes or performance; idealized influence). By enacting these behaviors, the transformational teacher can positively influence an individual's self-concept (e.g., Aryee, et al., 2012; Shamir, House, & Arthur, 1993), which is a person's perception of him or herself, shaped by his or her environment, experiences, and attributions of his or her own behaviors (Shavelson & Bolus, 1982; Shavelson, Hubner, & Stanton, 1976). Therefore, when leaders are able to effectively link followers' self-concept to the mission articulated by the leader, leaders are more likely to be successful (Aryee, et al., 2012; Bass, 1985; Shamir et al., 1993). Thus, by changing how followers feel about themselves and their

circumstances, transformational leaders are able to change the perceptions and behaviors of their followers and foster psychological safety.

Hypothesis 4: Transformational teachership positively relates to psychological safety.

In addition to the effect that transformational teachership has on psychological safety, psychological safety in turn influences student engagement. That is, psychological safety partially mediates the relationship between transformational leadership and student engagement.

As students experience psychological safety, they are likely to become more engaged, just as employees who perceive psychological safety become engaged in their jobs (Kahn, 1990). For students whose performance is consistently evaluated throughout the semester (via exams, papers, quizzes, peer discussions during class), psychological safety may play an instrumental part in their propensity to become engaged. If students fear negative evaluations from their peers and teachers, they may personally withdraw and fail to become engaged in their course work. Additionally, they may refrain from participating in intellectual and developmental challenges because they fear negative feedback that threatens their self-image. Each time students withdraw from learning opportunities, participation, or other class activities, they become less engaged in the class.

However, similar to why meaningfulness is not predicted to fully mediate the relationship between transformational teachership and engagement (e.g., Aryee et al., 2012); it is likely that psychological safety is only a partial mediator. That is, psychological safety is probably not the only mechanism that explains the relationship between transformational teachers and student engagement.

Hypothesis 5: Psychological safety partially mediates the relationship between transformational teachership and student engagement.

Self-efficacy. Each of Kahn's (1990) psychological states (meaningfulness, safety, and availability) contribute to individuals' ability to become engaged in their work (Chen, Zhang, & Vogel, 2011; May et al., 2004). However, Kahn's psychological states are not necessarily exhaustive nor all appropriate for the educational context. For example, though meaningfulness has received support as a psychological state, there has been mixed results for availability (e.g., May et al., 2004). Research results to date demonstrate that psychological availability (having the physical, emotional, and psychological resources to become engaged) does not contribute as much variance to engagement as Kahn originally proposed, suggesting that other, currently unidentified states, may be contributing to individuals' experience of engagement more directly than psychological availability. That is, other antecedents of engagement likely exist and the field would benefit from an updated model.

Self-efficacy refers to an individual's belief in his or her ability to succeed in specific situations (Bandura, 1977, 1994), which could include work, school, or personal domains. Kahn described critical psychological states as "how people's experiences of themselves and their work contexts influenced moments of personal engagement" and "that people employ and express or withdraw and defend their preferred selves on the basis of their psychological experiences of self-in-role" (p. 702). Self-efficacy has the potential to function similarly to Kahn's other psychological states by providing the context for individuals to feel that they can engage in their job or school roles. That is, when individuals feel competent and they have the emotional, physical, and cognitive abilities to succeed at the task, they are more likely to become engaged.

Research suggests perceptions of self-efficacy are malleable, especially domain specific perceptions, such as academic self-efficacy (e.g., Turner et al., 2009; Usher & Pajares, 2003), which is the type of self-efficacy of focus in this study. Specifically, research on the Pygmalion effect, the idea that communicating high expectations can improve individual performance and attitudes (Rosenthal & Jacobson, 1968), has shown that self-efficacy can be manipulated (Mitchell & Daniels, 2003). Consequently, a new stream of self-efficacy literature has emerged: one aimed at understanding antecedents of self-efficacy in order to modify individual perceptions of self-efficacy. One possible antecedent is leadership. Through enacting behaviors that convey inspirational motivation and intellectual stimulation, transformational leaders develop their followers' self-efficacy; their beliefs that they are able to do their jobs and do them well. Organizational researchers have been especially active in assessing the impact of leadership on self-efficacy (e.g., Gong, Huang, & Farh, 2009; Liu, Siu, & Shi, 2010; Nielsen, Yarker, Randall, & Munir, 2009; Pillai & Williams, 2004; Salanova, Lorente, Chambel, & Martínez, 2011). Collectively, their results show that not only is employee self-efficacy influenced by leaders, but self-efficacy has positive workplace outcomes, such as engagement (e.g., Salanova et al., 2011)

Examining the potential of teachers as leaders to develop student self-efficacy has yet to gain prominence in the educational literature; however, the call to investigate various sources and antecedents of student self-efficacy has been made (Usher & Pajares, 2008). Given strong findings in the organizational literature, it is expected that transformational teachership will positively influence students' academic self-efficacy

Hypothesis 6: Transformational teachership positively relates to academic self-efficacy.

In addition to the relationship between transformational teachers and academic self-efficacy, the relationship between self-efficacy and engagement may be particularly relevant for

students, as a plethora of research has demonstrated the important role of self-efficacy in student outcomes such as learning and performance (e.g., Bandura, 1993; Chemers, Hu, & Garcia, 2001; Multon, Brown, & Lent, 1991; Turner, Chandler, & Heffer, 2009). Self-efficacy may lead to engagement by serving as a personal resource to individuals (e.g., Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009) and as a result, increase the effort people put forth, the persistence and perseverance displayed in the face of difficulties, help individuals focus to on their task, and encourage them to use more efficient task strategies (Bandura, 1986; Mitchell & Daniels, 2003). This resource based approach is in accordance with Bandura's (2001) social cognitive theory, which proposes behavior is a function of motivation, personal resources, and contextual resources. That is, transformational leadership can serve as a contextual resource for students, which can facilitate personal resources, such as academic self-efficacy. As a result of these resources (as defined by Bandura, 2001 and Xanthopoulou et al., 2009), students feel motivated and engaged in their work. Using Bandura's social cognitive theory to explain how self-efficacy mediates the relationship between transformational leadership and engagement has been supported in the organizational literature. In a recent study using the theory, Salanova et al. (2011) used a sample of nurses and found that transformational enhanced the personal self-efficacy of the nurses, and as a result, the engagement of those nurses also increased.

Therefore, given the substantial evidence in support of the importance of self-efficacy to student outcomes and the initial findings in the leadership literature that leaders can promote employee self-efficacy, I propose that not only is student academic self-efficacy a critical psychological state that leads to engagement, but that it can be facilitated by transformational teachers. However, as with psychological meaningfulness and psychological safety, it is likely that psychological safety is only a partial mediator. That is, psychological safety is unlikely to be

the only mechanism that explains the relationship between transformational teachers and student engagement.

Hypothesis 7: Academic self-efficacy partially mediates the relationship between transformational teachership and student engagement.

Thus, like the principles of job characteristics theory (Hackman & Oldham, 1980) and Kahn's (1990) model of employee engagement, I argue that transformational teachership positively affects student engagement through the mediating psychological conditions of psychology meaningfulness, psychological safety, and self-efficacy. However, the psychological states are also applicable to other student outcomes, which I explain in detail below.

Other Student Outcomes: Satisfaction, Effort, & Performance

Transformational leadership has been linked to several positive outcomes in both the organizational and educational literature, including both attitudinal and behavioral outcomes (e.g., Bolkan & Goodboy, 2009; Dvir, Eden, Avolio, & Shamir, 2002; Harrison, 2011; Harvey et al., 2003; Wang, Oh, Courtright, & Colbert, 2011). However, as previously noted, there has been a serious deficiency in the educational literature in explaining how transformational leadership leads to positive student outcomes. Therefore, a main contribution of my study is in explaining how transformational teachership fosters the critical psychological states that students experience, which in turn leads to positive student outcomes.

For the proposed study, Harvey et al.'s (2003) two criteria were used for selecting outcome variables of interest. First, given the conceptual framework of my study, inclusion was predicated on whether the outcomes have shown significant relations to transformational leadership in the organizational literature. Second, only variables deemed meaningful in the

context of university teaching were included. As a result, satisfaction, effort, and performance were included as outcome variables.

Currently, researchers have identified several positive student outcomes related to transformational teaching, including satisfaction, effort, and performance. However, what the field currently lacks is a theoretically driven understanding of *how* transformational teachership influences these student outcomes. I use the psychological states discussed above (psychological meaningfulness, psychological safety, and self-efficacy) to propose and explain the conditions under which transformational teachership exerts its influence on each anticipated student outcome.

Perceived Student Satisfaction

In the organizational science literature, satisfaction is often described as an individual's attitude about his or her job, and is comprised of cognitive (evaluative), affective (emotional), and behavioral components (Hulin & Judge, 2003). Job satisfaction has been associated with a number of positive employee outcomes, such as attendance at work (Scott & Taylor, 1985), turnover decisions (Carsten & Spector, 1987; Hom, Katerberg, & Hulin, 1979; Miller, Katerberg, & Hulin, 1979; Mobley, Horner, & Hollingsworth, 1978), and prosocial and organizational citizenship behaviors (Bateman & Organ, 1983), making it an attitude of great interest.

Transformational leadership is positively related to job satisfaction (e.g., Conger, Kanungo, & Menon, 2000; Hater & Bass, 1988; Walumbwa et al., 2004), such that employees with transformational leaders report high levels of job satisfaction. The same positive association between transformational leadership and satisfaction has also been shown in the educational literature, wherein transformational leadership predicts students' satisfaction with the instructor

(Harvey et al., 2003). The theoretical links as to *why* transformational teachership influences student satisfaction, however, have not yet been proposed in the educational literature.

One way in which transformational leadership positively influences perceived student satisfaction is by fostering students' perceived psychological meaningfulness. As previously proposed, transformational teachership fosters psychological meaningfulness through the mechanisms of expectancy theory (Vroom, 1964), social information processing theory (Salancik & Pfeffer, 1987), and the job characteristics theory (Hackman & Oldham, 1980). Consistent with job characteristics theory, psychological meaningfulness as a psychological state leads to job satisfaction.

Another mechanism by which transformational teachership leads to student satisfaction may be affective events theory (AET; Weiss & Cropanzano, 1996). AET suggests that individuals' affective experiences influence their interpretation of the job and, ultimately, their satisfaction and performance. For example, tasks that are considered challenging, rewarding, or that provide an opportunity for development induce positive affect and increase job satisfaction (e.g., Wegge, van Dick, Fisher, West, & Dawson, 2006). Weiss and Cropanzano defined affect as an individual's emotional reaction to the job and to the events that happen on the job. Relatedly, perceptions of psychological meaningfulness are affective as well; they are feelings and emotions about the perceived worth of one's work. Therefore, when individuals find their work psychologically meaningful (Kahn, 1990), according to AET, they are likely to interpret that work as satisfying. Thus, teachers can positively influence the affective experience of students in the classroom by emphasizing the importance of the content or the contribution a class or coursework makes to students' personal or professional development. As a result of

these positive affective experiences and increased psychological meaningfulness, students are more likely to be satisfied with the teacher and the class.

Hypothesis 8: Psychological meaningfulness partially mediates the relationship between transformational teachership and student satisfaction.

Student Effort

The relationship between transformational leadership and follower effort is particularly relevant to the educational setting, as researchers have associated student effort to academic achievement (Carbonaro, 2005; Michaels & Miethe, 1989). Preliminary research has demonstrated empirical associations between transformational teachers and student effort (e.g., Pounder, 2008; Walumbwa et al., 2004), with transformational leadership showing a positive effect on the effort that students are willing to devote to the class (Harvey, et al., 2003; Pounder, 2008). To date, however, none have explained the theoretical mechanisms by which transformational leadership is associated with student effort, nor have researchers confirmed the causal direction of the relationship. I propose to do both in my study.

In his original paper, Burns (1978) proposed that transformational leaders motivate followers in such a way that encourages followers to move beyond their basic needs and achieve self-actualization needs in Maslow's (1954) needs hierarchy. Bass (1985, 1998) expanded Burns' conceptualization by proposing that transformational leaders not only encourage followers to *achieve* self-actualization, but that leaders also *expand the scope* of their followers' need for self-actualization. As a result for the need for self-actualization, Bass (1985) proposed that followers' desire to perform beyond expectations leads them to expand effort in completing the task. Hence, effort is a result of the motivation followers' experience as they try to meet their needs for self-actualization. In the classroom, Maslow's hierarchy of needs may relate to the motivation of

students, such that transformational teachers positively influence students to become self-actualized within the context of the class. What this means is that transformational teachers get students to move beyond lower order needs of simply passing the class or receiving a specific grade, to the higher order need of self-actualization wherein students devote time and energy to realizing their potential as a student; mastery of the material. To meet their full potential as a student (i.e., self-actualization), students exert effort. Hence, transformational teachers can positively influence student effort by encouraging them to meet their potential and go beyond what their own basic expectations.

Hypothesis 9: Psychological meaningfulness partially mediates the relationship between transformational teachership and student effort.

Student Performance

Given that instructors who seem to demonstrate transformational leadership in their classrooms are perceived as effective teachers (Walumbwa et al., 2004) and that students are willing to exert extra effort for such teachers (Pounder, 2008), it logically follows that students should demonstrate increased learning outcomes, and outcome comparable to employee performance. Performance outcomes for students are learning outcomes that may include students' actual grades and attendance (e.g., Harvey et al., 2003). Research has shown that student participants working under charismatic and/or transformational leaders demonstrated higher task performance than those working under considerate leaders (Howell & Frost, 1989). Likewise, Kirkpatrick and Locke (1996) found that vision was an important transformational leader characteristic that predicted performance outcomes and attitudes. However, significant contributions to the educational literature could be made by advancing the theoretical understanding of how these relationships are fostered.

As a psychological state that flows from transformational leadership via inspirational motivation and intellectual stimulation (as discussed previously), self-efficacy represents a viable explanation for how transformational positively influences student performance. Self-efficacy is based on the evaluations an individual makes about his or her ability to succeed in domain specific situations (Bandura, 1977, 1994) and has received significant empirical support as an important antecedent to student learning and performance (e.g., Bandura, 1993; Chemers, Hu, & Garcia, 2001; Multon, Brown, & Lent, 1991; Turner, Chandler, & Heffer, 2009). The evidence connecting self-efficacy to improved performance is well established, with many studies in support (e.g., Bouffard-Bouchard, Parent, & Larivee, 1991; Chemers et al., 2001).

The relationship between self-efficacy and student performance is based on the cognitive, affective, and motivational processes that lead to differences between low efficacy and high efficacy individuals. The cognitive aspects underlying self-efficacy include the effective use of metacognitive strategies, which involve planning and self-regulation (Chemers et al., 2001). Specifically, students high in academic self-efficacy engage in behaviors that foster high performance, such as using effective cognitive strategies to learn material, managing their time and learning environments effectively, and monitoring and regulating their own effort. The underlying affective processes include the influence mood and emotions can have on performance (e.g., students with high self-efficacy experience less nagging feelings of self-doubt and anxiety; Chemers et al., 2001). Chemers et al. argue that those with high self-efficacy perceive academic demands as challenging (positive), rather than threatening (negative). Essentially, the affective component of self-efficacy relates to students' ability to think positively and manage anxiety. High self-efficacy can lead to enhanced student performance through motivational processes (Chemers et al., 2001). For example, self-efficacy leads to the setting of

more difficult goals (Wood, Bandura, & Bailey, 1990; Zimmerman, Bandura, & Martinez-Pons, 1992), and consequently, more difficult goals leads to higher performance (e.g., Locke & Latham, 1990; Martens, Hiralall, & Bradley, 1997). Taken together, the cognitive, affective, and motivational processes that underlie self-efficacy help students perform by encouraging them to use appropriate cognitive strategies, to experience more positive emotions in response to potentially stressful expectations, and to establish more difficult academic goals (Chemers et al., 1990).

Hypothesis 10: Academic self-efficacy partially mediates the relationship between transformational teachership and student performance.

Summary of Current Study

Although transformational leadership has been a popular construct in both the organizational science and educational literatures, there remains a shortage of research in two main areas: operationalizing transformational leader behaviors and understanding the theoretical mechanisms that explain how transformational leadership facilitates positive outcomes for followers. Therefore, one goal of this study is to use the specific, actionable leader behaviors proposed above to create a training intervention for teachers. A second goal of this study is to advance the theoretical understanding of transformational leadership. To achieve this goal, I propose a new model of transformational teachership, one that extends current theoretical understanding by proposing that transformational teachers facilitate followers' experience of three psychological states, perceived meaningfulness, psychological safety, and self-efficacy, which in turn influences student outcomes, including student engagement, satisfaction, effort, and performance (see Figure 1).

METHOD

Participants

This study consisted of two groups of participants: graduate students who teach Introductory Psychology and undergraduate students enrolled in their introductory psychology classes at a large public university in the western region of the United States. A total of 541 undergraduate students participated as part of an extra credit opportunity. Undergraduate participants had a mean age of 19.59 years (SD = 2.24) and were mostly freshman (58.4%; 24.2% were sophomores, 10.8% were juniors, and 6.5% were seniors or above). Participants were mostly female (62.1% were female, 37.3% were male) and predominantly Caucasian (75.8%; 7.4% were Hispanic, 5.1% were African American, 1.7% were Alaskan/Pacific Islander, and 10% identified as other). These characteristics are consistent with the student body of the university where this research was conducted.

The demographic information for the graduate students who taught the Introductory Psychology classes was not collected due to concerns of anonymity of the participants. That is, with only three participants, there were concerns that participants would be easily identifiable if their demographic information was provided.

Procedures

Undergraduate student participants. In courses where graduate student instructors agreed to collaborate, the teachers announced an extra credit opportunity for each student enrolled in Introductory Psychology. Students were able to earn a small amount of extra credit for participating in the study (2-5 points depending on the instructor). To avoid perceptions of coercion, participants were given the option to either participate in the study or summarize an

article on employee engagement (both options were worth the same amount of extra credit and both were completely voluntary). Only two students selected the article summary option. There were two data collection periods, one near the start of the semester (a baseline) and one after a five week waiting period (after training and participants had a chance to see changes in the instructor).

For the first data collection event, participants who volunteered to participate were sent an email containing an online survey link. The link directed participants to the data collection website, Qualtrics, where participants filled out a survey about their experiences in class with their teachers. Participants began by reading an informed consent page, which included information about the research study. At the end of the page, participants asserted they were at least eighteen years of age. By moving forward with the survey, participants consented to participate in the study (implied consent; Appendix A) and were asked to fill out a series of self-report measures (Appendix B). To avoid the possibility of fatigue, participants were able to save their responses and return to them at a later time. Upon completion of filling out the surveys, participants filled out demographic information (Appendix C). Once all survey measures were complete, all participants were thanked for their time and participation (Appendix D). No deception was used.

For the second data collection event, all eligible participants (any student enrolled in the classes of the instructors) again received an email requesting participation in the second half of the study. The email contained an online survey link that directed participants to a data collection website, where they filled out a survey about their experiences in class with their teachers. Similar to the previous wave of data collection, participants began by reading an informed consent page and consented to participate in the study (Appendix A). Participants were asked to

fill out a series of self-report measures (Appendix B) and were able to save their responses and return to them at a later time to avoid the possibility of fatigue. Upon conclusion of filling out the surveys, participants filled out demographic information (Appendix C). Once all survey measures were completed, all participants were debriefed about the study and thanked for their time and participation (Appendix D). No deception was used.

Extra credit for participants who participated in the first session was awarded at the end of the first collection event. Extra credit for participants who participated in the second session was awarded at the end of the second collection event (to encourage responses at both time points and to reduce attrition). To reduce attrition from Time 1 to Time 2, follow up emails were sent to students at Time 2. Extra credit was chosen as an incentive for participation due to value students place on extra credit. Indeed, extra credit seems to be a valuable reward for students, as it has shown to increase attendance (Wilder, Flood, & Stromsnes, 2001) and performance on class quizzes (Padilla-Walker, 2006).

Teachers and training program. Graduate student instructors teaching Introductory Psychology served as the teachers in this study. This set of teachers was selected because of the similarities across their classes, allowing for strong experimental control. Specifically, the make-up of the student participants is similar across all classes (almost all freshman with similar gender dispersion across classes), the content is similar (while the teacher does have some discretion, there are specific topic areas that must be covered), and the written assignments are exactly the same (before each semester, the group of graduate teachers decides on the writing assignments for the semester). Further, because this group was comprised graduate student teachers, the group had similar levels of teaching experience.

After initial contact and consent, I set up two meetings with each graduate student participant in the experimental condition (there were two instructors in this condition). The first meeting lasted approximately one hour and included an overview of transformational leadership, why transformational leadership is valuable in the academic setting, and a list of transformational teachership behaviors. After the project overview, the graduate student participants selected a minimum of 12 transformational teachership behaviors (three from each dimension) that he/she could commit to implementing in his/her class throughout the semester (see Appendix E for the full list of behaviors). Because no research studies to date have manipulated transformational teachership with specific behaviors, the number of behaviors needed to elicit change is difficult to quantify. However, it is reasonable to assume that each teacher should incorporate behaviors from each dimension, as each dimension provides unique variance in predicting transformational leadership (Bass & Riggio, 2006). Second, because there is no current research on exactly which behaviors matter the most, it was important for teachers to adopt at least a few behaviors from each dimension. At the end of the meeting, the graduate student participants and the researcher co-created an action plan to implement the selected behaviors.

The second meeting lasted approximately 30 minutes and served as a check-in meeting with the graduate student participants. In the follow-up meeting, the graduate students reflected on their behaviors in the classroom and discussed any problems they encountered. After addressing problems or perceived hurdles, I asked for verbal confirmation that the graduate student participant had been implementing each transformational teachership behavior selected in the first meeting.

Measures

See Appendices B and C for all survey items (Appendix B for self-report measures of variables; Appendix C for demographic and control items). All measures were self-report and from the public domain (i.e., none are copyrighted).

Demographic variables. Undergraduate participants were asked to fill out demographic information. These demographics included the age, race, and gender (see Appendix C for full list of items).

Control variables. Control variables were assessed, including undergraduate participants' year in school, expected grade, class attendance, and individual difference characteristics (see Appendix C for full list of items). Pounder (2008) provides a thorough review of student-related, course-related, and teacher-related factors that influence student evaluations, especially as they relate to leadership. Though every outside variable cannot be accounted for, this study includes several of Pounder's factors, such as gender of the follower, academic maturity (i.e., year in school and number of courses taken), expected grade, social desirability, positive affectivity, and teacher experience (how many years an instructor has taught overall; how many times an instructor has taught a specific course). Student gender was assessed with the demographic information and was based on three options: male, female, and other. Academic maturity was assessed by two questions: the first question pertained to the students' academic standing (though the majority of students were freshman, there were also sophomores, juniors, seniors, or other) and the second pertained to the number of college courses the student had completed. Expected grade was assessed by students entering in a self-report percentage (e.g., 78%) rather than a letter grade. In addition, students were asked to voluntarily submit their student identification numbers so that actual grades could be established and assessed.

Social desirability was assessed using Paulhus' (1984) social desirability scale. The scale is comprised of two subscales: one designed to assess impression management and the other to assess self-deception (Paulhus, 1984 provides adequate reliability and validity evidence). The scale includes 15 items (seven impression management and eight self-deception) responded to using True/False. Example items include: "Sometimes at elections, I vote for candidates I know little about" and "I am sometimes irritated by people who ask favors of me."

Affectivity was assessed using the positive/negative affectivity scale (PANAS; $\alpha = .87$ for positive affectivity and $\alpha = .87$ for negative affectivity; Watson, Clark, & Tellegen, 1988). The PANAS is comprised of 20 items responded to on a 7-point Likert scale ranging from (1) *Always* to (7) *Never*. Respondents are asked about the extent to which they feel a series of emotions on a general basis. Example items include: "Enthusiastic" and "Proud."

Manipulation check. To ensure that the transformational teachership training was effective, teachers were rated by students on their transformational teachership behaviors (note: this behavioral checklist is different than the measure designed to assess perceptions of transformational leadership). Transformational teachership behaviors were assessed using a behavioral observation checklist ($\alpha = .87$ for this sample), rated on a Likert scale ranging from (1) *Strongly Disagree* to (7) *Strongly Agree*. The students assessed their graduate teachers on the occurrence of 16 behaviors. Example items include: "Knows the names of his/her students" and "Consistently asks for student feedback." The purpose of using the behavioral checklist was to assess whether or not the transformational leader behaviors were salient to the students. It is possible that students see the behaviors (e.g., learning student names), but not translate those behaviors into perceptions of transformational teachership. That is, this measure was designed to be an objective measure of the presence of the behaviors (the manipulation check).

Transformational teachership. Student perceptions of transformational teachership were assessed using a self-report measure (α = .94 for this sample). To assess transformational teachership, adapted items from Podsakoff, MacKenzie, Moorman, and Fetter's (1990) measure of transformational leadership, the Transformational Leadership Inventory (TLI) was used (they reported α = .87). The TLI is composed of 28 items responded to on a 7-point Likert scale ranging from (1) *Strongly Disagree* to (7) *Strongly Agree*. However, five items composing the Contingent Reward subscale were removed because this subscale is not designed to capture transformational leadership. Other researchers have omitted or adapted items from the TLI to fit their specific research needs (e.g., Callow, Smith, Hardy, Arthur, & Hardy, 2009; Resick, Whitman, Weingarden, & Hiller, 2009), though no studies have adapted it to the student-teacher relationship. However, given its adaptability to other contexts (e.g., military; Resick et al., 2009), it was expected that it would function similarly in the context of the current study. These omissions left 23 items that measure transformational teachership. Example items include: "Behaves in a manner thoughtful of my personal needs" and "Insists on only the best performance." These items were anchored on the same 7-point response scale as the TLI.

Academic self-efficacy. Student perceptions of academic self-efficacy were assessed using a self-report measure with adapted items from Solberg and colleagues' (e.g., Solberg et al., 1998; Solberg, O'Brien, Villarreal, Kennel, & Davis, 1993; Solberg & Villarreal, 1997) measure of college student self-efficacy, the College Self-Efficacy Inventory (CSEI; α = .96 for this sample). The CSEI comprises 20 items designed to measure students' confidence in their ability to engage in a range of college behaviors. Responses are rated on a 10-point Likert scale, ranging from (0) *Not at all confident* to (9) *Extremely confident*. Reliability estimates for scores obtained using this measure range from .83 to .92 (Gore, 2006). The CSEI's negative correlations with

physical and psychological distress and positive correlations with adjustment, academic persistence, and social integration provide validity evidence for the use of the measure (e.g., Solberg et al., 1993, 1998; Solberg & Villarreal, 1997).

Eight items were removed from the CSEI because those items were part of subscales intended to capture self-efficacy relative to social and roommate behaviors (rather than academic self-efficacy). The removal of these items was informed by Gore's (2006) factor analysis of the scale. All items from the "roommate" factor were removed and any items on the "social" factor not relating to academics were removed (e.g., the item "making new friends at college" was removed, but the item "asking a question in class" was included). To date, there has not been research on adapting this measure, but the conceptual reasons for including and discarding items will likely preserve the integrity of the scale for the purposes of this study. These omissions left 12 items. Example items include: "Research a term paper," "Manage your time effectively," and "Ask a question in class."

Psychological meaningfulness. Perceptions of psychological meaningfulness were assessed using six items adapted from May et al.'s (2004) measure (they reported $\alpha = .90$; $\alpha = .94$ for this sample). Responses were captured using a Likert-type response scale ranging from 1 = *Strongly Disagree,* to 5 = S*trongly Agree*. Examples of adapted items include: "My class activities are personally meaningful to me" and "The work I do in this class is worthwhile."

Psychological safety. Perceptions of psychological safety were assessed using seven items adapted from Edmondson's (1999) measure of psychological safety ($\alpha = .74$ for this sample). An adapted version of this scale for the student population has been used before (Schepers et al., 2008). Responses were captured using a Likert-type response scale ranging from 1 = *Very Inaccurate,* to 7 = V*ery Accurate*. Example items include: "If you make a mistake, it is

often held against you" and the reverse coded item "It is okay to bring up problems and tough issues."

Student engagement. Perceptions of engagement were assessed using adapted items from Rich et al.'s (2010) 18-item measure of employee engagement, the job engagement scale (JES; $\alpha = .95$ for this sample). This scale is based on Kahn's (1990) definition of employee engagement and its three dimensions: physical, cognitive, and emotional engagement. Each dimension is represented by six questions. Responses were captured using a Likert-type response scale ranging from 1 = *Strongly Agree*, to 5 = *Strongly Disagree*. Examples of adapted items include: "I work with intensity in this class" (physical), "I am enthusiastic about this class" (emotional), and "My mind is focused on my course work" (cognitive).

Student Satisfaction. Perceptions of student satisfaction were assessed using a measure of satisfaction with supervisor (adapted from Warr, Cook, & Wall, 1979). Warr et al. (1979) have a 16-item measure of job satisfaction (they reported $\alpha = .85$; $\alpha = .86$ for this sample). Using items pertaining to supervisor satisfaction, responses to 4 items were captured using a Likert-type response scale ranging from 1 = *Extremely Dissatisfied*, to 7 = *Extremely Satisfied*. Examples of adapted items include: "Relations between students and teacher" and "The recognition you get for good work."

Effort. Perceptions of effort were assessed using adapted items from Brown and Leigh's (1996) 10-item measure of effort (they reported $\alpha = .82$; $\alpha = .93$ for this sample). This scale is based on two dimensions: time commitment (persistence) and work intensity (energy exerted per unit of time). Each dimension is represented by five questions. Responses were captured using a Likert-type response scale ranging from 1 = *strongly agree*, to 7 = *strongly disagree*. Examples of adapted items include: "Few of my peers put in more hours weekly than I do" and "I put in

more hours throughout the year than most students do."

Student performance. Performance was assessed using grades from an assigned paper in class. Exam grades were not used due to potential issues with varying exam difficulty by class; that is, difficulty levels could not be controlled across classes nor could the difficulty level be accurately measured for control purposes. The papers, however, were graded by designated writing graduate teaching assistants, who receive special training to grade the papers and who attend calibration meetings throughout the semester. The use of outside graduate student graders is important for this study, because the graders represent a more objective form of grading (that is, if transformational teachers form strong relationships with their students, they may grade their papers more easily than if they feel detached from their students).

RESULTS

Preliminary Analyses

Means, standard deviations, and correlations of study variables are shown in Table 1. The reliability estimates for all scales were adequate (Nunnally & Bernstein, 1994), ranging from .74 to .96. A reliability estimate for participant performance was not calculated given that performance was based on a single observed variable (i.e., the grade received on a writing assignment).

To provide support for the internal construct validity of the variables used in this study, confirmatory factor analyses (CFA) were used before analyses were run (analyses were conducted using the software program, EQS 6.1; Bentler, 2006). The most commonly used estimation procedure, maximum likelihood estimation, was used (Kline, 2011). When variables reflected issues with univariate and multivariate non-normality (skew and/or kurtosis), maximum likelihood robust estimation was used. Missing data were addressed using the default: listwise deletion (the entire record is excluded if a single value is missing). Listwise deletion was selected as the method of choice due to the large number of students who did not complete surveys at both Time 1 and Time 2 (e.g. item regression substitution was not possible because participants were missing entire measurement scales).

Most of the study variables were hypothesized as a single factor with the exception of employee engagement (hypothesized to be a higher-order factor with three lower-order factors; Kahn, 1990; Rich et al., 2010). The factor structure of each variable was tested accordingly.

Evaluation of each variable was based on widely used indices of fit, including the chi-squared statistic (a significant chi-square value indicates a poorly fitting model), root mean

square error of approximation (RMSEA; close to 0.06 to indicates good fit; Bentler & Hu, 1999), and comparative fit index (CFI; values greater than 0.95 indicate good fit; Bentler & Hu, 1999). For each variable, the chi-squared test statistic was significant. However, the chi-squared test statistic is sensitive to sample size, such that studies with a large number of participants are more likely to result in a significant chi-squared value. Because there were up to 461 participants in this study, other indices were used to determine model fit. Therefore, RMSEA and CFI were also used to assess model fit (Hooper, Coughlan, & Mullen, 2008). Fit indices for all study variables are listed in Table 2.

Control Variables

Several variables were proposed as potential control variables. Specifically, age, year in school, expected grade, and class difficulty were included as possible control variables for transformational leadership. To examine the influence of each of these variables relative to transformational teachership, I first looked at the bivariate correlations between each proposed control variable and transformational leadership. Out of the four control variables, only year in school was significantly correlated with student perceptions of transformational teachership (r = -0.14; p = .02). To further assess the relationship between year in school and student perceptions of transformational teachership, a partial correlation was calculated. Results indicate that after controlling for the other variables in the study, the relationship between year in school and student perceptions of transformational teachership was non-significant (r = 0.03; p = .62). Thus, based on evidence from both the bivariate and partial correlations, the control variables proposed did not explain a significant amount of variance in student perceptions of transformational teachership, and therefore were not included in further analyses.

In addition to the variables discussed above, positive and negative affectivity were also proposed as control variables. As before, I first looked at the bivariate correlations between affectivity and perceptions of transformational teachership. Results from the bivariate correlations demonstrated that positive affectivity was strongly related to several study variables, including academic self-efficacy ($r = 0.17$; $p = .004$), student perceptions of transformational teachership ($r = 0.33$; $p < .001$), observed transformational teachership behaviors ($r = 0.25$; $p < .001$), psychological meaning ($r = 0.17$; $p = .004$), perceived psychological safety ($r = 0.33$; $p < .001$), student engagement ($r = 0.28$; $p < .001$), and effort ($r = 0.30$; $p < .001$). However, partial correlations indicated that after controlling for the other variables in the study, positive affectivity was only significantly related to student perceptions of transformational teachership ($r = 0.13$; $p = .04$). Therefore, positive affectivity was used as a control variable in all analyses with the perceptions of transformational teachership variable. Negative affectivity was significantly correlated with perceptions of transformational teachership ($r = -0.16$; $p < .01$), student satisfaction ($r = -0.11$; $p < .05$), and perceived psychological safety ($r = -0.26$; $p < .01$). However, partial correlations indicated that after controlling for the other variables in the study, negative affectivity was no longer significantly related to study variables. Thus, it was not included as a control variable in this study.

Hypothesis 1

To assess differences in student perceptions of transformational leadership between teachers who received the training condition and those that did not (Hypothesis 1a), a within-subjects t-test assessed the differences in perceptions of transformational teachers between Time 1 and Time 2. Results for instructor #1 (experimental group) suggest that there was a significant increase between Time 1 and Time 2 (see Table 3 for means and standard deviations for each

variable). For transformational teachership behaviors, there was a significant difference between Time 1 and Time 2, $t(97) = -2.37$, $p = .02$, such that students reported a significant difference in observed behaviors over time. The effect size for this analysis ($d = 0.21$) was small according to Cohen's (1988) convention for effect size (.10 - .29 is a small effect, .30 - .49 is a medium effect, and greater than .50 is a large effect). Students also reported a significant increase in effort between Time 1 and Time 2 ($t(97) = -3.61$, $p < .001$). The effect size for this analysis ($d = 0.27$) was small. There were no significant differences between Time 1 and Time 2 on the following variables: perceptions of transformational teachership, academic self-efficacy, meaning, safety, student engagement, effort, and satisfaction.

Results for instructor #2 (experimental group) also demonstrated a significant increase in observed transformational teachership behaviors between Time 1 and Time 2; $t(131) = -2.69$, $p < .01$. The effect size for this analysis ($d = 0.54$) was large according to Cohen's (1988) conventions. There were also significant differences in psychological meaning ($t(131) = 2.02$, $p = .05$) and student engagement ($t(131) = 2.00$, $p = .05$), though they are in the opposite direction of what was expected. That is, students reported a decrease in psychological meaning and student engagement over time. However, the effect size for both analyses were small ($d = 0.17$ and $d = 0.16$, respectively). There were no significant differences between Time 1 and Time 2 on the following variables: perceptions of transformational teachership, academic self-efficacy, safety, effort, and satisfaction (see Table 4 for means and standard deviations for each variable).

Results for instructor #3 (control group) demonstrated no significant differences on any variables between Time 1 and Time 2, including transformational teachership behaviors (see Table 5 for means and standard deviations of each variable). Therefore, Hypothesis 1a was supported: students of instructors in the experimental group reported a significant increase in

observed transformational teaching behaviors as compared to the control group. Because this hypothesis is supported, it supports the manipulation in this study. That is, the training seemed to be effective in increasing student observations of specific teacher behaviors.

One-way analysis of variance tests (ANOVAs) were used to assess the differences between teachers in the experimental (training) condition and those in the control group on transformational teachership (Hypothesis 1b) and each outcome of interest. Results suggest that there were no differences between the instructors for perceptions of transformational teachership, student engagement, effort, or satisfaction. There was a significant difference between groups on the performance variable ($F(2, 497) = 5.68$, $p = .004$). Post-hoc analyses (Tukey HSD and Bonferroni) demonstrate that students in the experimental conditions (had teachers demonstrating transformational teaching behaviors) performed significantly better than students in the control condition (see Table 6 for means and standard deviations). Based on these findings, Hypothesis 1b was not supported.

Hypotheses 2, 4, and 6

Hypotheses 2, 4, and 6, which proposed that transformational teachership was significantly related to psychological meaning, psychological safety, and academic self-efficacy (respectively) were assessed using simple linear regression. In separate analyses, transformational teachership was regressed on perceived psychological meaning, psychological safety, and academic self-efficacy. Each relationship was significant (see Table 7 for coefficients), supporting Hypotheses 2, 4, and 6.

Hypotheses 3, 5, and 7-10

Mediation was tested using Barron and Kenny's (1986) method. According to this method, the first step is to test for a significant relationship between the predictor (X) and the

outcome (Y). If a significant relationship exists, the second step is to test for a significant relationship between X and the mediator variable (M). If a significant relationship exists, the third step is to regress Y on both X and M. Based on the results from Step 3, if the relationship for both X and M are significant, this is considered evidence of partial mediation. If X is non-significant, but M is significant, this is considered evidence of full mediation (Barron & Kenny, 1986). Summary of regression analyses for each mediation hypothesis (3, 5, and 7-1) can be found in Table 8.

To test Hypothesis 3, the first step was to regress student engagement (Y) on transformational teachership (X). The relationship between student engagement and transformational teachership was significant ($\beta = .30$, se = .05, $t(272) = 5.21$, $p < .001$). Because this relationship was significant, psychological meaning (M) was regressed on transformational teachership (X). The relationship between psychological meaning and transformational teachership was significant ($\beta = .46$, se = .04, $t(461) = 11.07$, $p < .001$). Next, student engagement was regressed on both psychological meaning and transformational teachership. With psychological meaning and transformational teachership in the model, transformational teachership still demonstrated a significant relationship with student engagement ($\beta = .14$, se = .06, $t(271) = 2.26$, $p = .03$). Thus, there is evidence that perceived psychological meaningfulness partially mediates the relationship between transformational teachership and student engagement. To test if the indirect effect of X on Y through M was significantly different from zero, a Sobel test was used (Sobel, 1982, 1986). That is, calculating an estimate of the indirect effect by multiplying path A (the slope for X when M is regressed on X) by path B (the slope for M when Y is regressed on both X and M). Analyses show that the Sobel test was significant ($p < .001$), which indicates evidence of partial mediation, thus providing support for Hypothesis 3.

Hypothesis 5 was tested using the same steps as above. Student engagement (Y) was regressed onto transformational teachership (X), which was significant (β = .30, se = .05, $t(272) = 5.21$, $p < .001$). Psychological safety was then regressed on transformational teachership, which was also significant (β = .53, se = .03, $t(461) = 13.34$, $p < .001$). Next, student engagement was regressed on both psychological safety and transformational teachership. When psychological safety and transformational teachership were both included in the model, the relationship between psychological safety and engagement was no longer significant (β = .11, se = .09, $t(271) = 1.52$, $p = .13$). Thus, psychological safety does not mediate the relationship between transformational teachership and student engagement (failing to support Hypothesis 5).

For Hypothesis 7, student engagement was regressed onto transformational leadership, which was significant (β = .30, se = .05, $t(272) = 5.21$, $p < .001$). Academic self-efficacy was then regressed on transformational leadership, which was also significant (β = .23, se = .12, $t(461) = 5.00$, $p < .001$). Next, student engagement was regressed on both academic self-efficacy and transformational teachership. With academic self-efficacy and transformational teachership in the model, the relationship between academic self-efficacy and engagement was no longer significant (β = -.04 se = .02, $t(271) = -.76$, $p = .45$). Thus, academic self-efficacy does not mediate the relationship between transformational teachership and student engagement, failing to support Hypothesis 7.

Hypothesis 8 was tested by regressing student satisfaction onto transformational leadership, which was significant (β = .39, se = .07, $t(272) = 6.91$, $p < .001$). Psychological meaning was then regressed on transformational leadership, which was also significant (β = .46, se = .04, $t(461) = 11.07$, $p < .001$). Next, student satisfaction was regressed on both psychological meaning and transformational teachership. With psychological meaning and

transformational teachership in the model, transformational teachership still demonstrated a significant relationship with student satisfaction (β = .30, se = .08, $t(271) = 4.93$, $p = .03$). Thus, there is evidence that perceived psychological meaningfulness partially mediates the relationship between transformational teachership and student satisfaction. A significant Sobel test ($p < .001$) indicates evidence of partial mediation, supporting Hypothesis 8.

Hypothesis 9 was tested by regressing student effort onto transformational teachership, which was significant (β = .20, se = .10, $t(272) = 3.41$, $p = .001$). Psychological meaning was then regressed on transformational teachership, which was also significant (β = .46, se = .04, $t(461) = 11.07$, $p < .001$). Next, student effort was regressed on both psychological meaning and transformational teachership. With psychological meaning and transformational teachership in the model, transformational teachership no longer demonstrated a significant relationship with student effort (β = .10, se = .11, $t(271) = 1.53$, $p = .13$). Thus, there is evidence that perceived psychological meaningfulness fully mediates the relationship between transformational teachership and student effort, supporting Hypothesis 9.

Hypothesis 10 was tested by regressing student performance onto transformational teachership, which was significant (β = .13, se = .02, $t(437) = 2.66$, $p = .008$). Academic self-efficacy was then regressed on transformational teachership, which was also significant (β = .23, se = .12, $t(461) = 5.00$, $p < .001$). Next, student performance was regressed on both academic self-efficacy and transformational teachership. When academic self-efficacy and transformational teachership were both included in the model, academic self-efficacy was no longer significant (β = .04, se = .01, $t(436) = 0.82$, $p = .41$). Thus, academic self-efficacy does not mediate the relationship between transformational teachership and student engagement (failing to support Hypothesis 10).

Summary of Hypotheses

Hypothesis 1a: Students of the teachers who receive training report a significant increase in observed transformational teaching behaviors. *Supported.*

Hypothesis 1b: Teachers who implement transformational teachership behaviors receive higher ratings on transformational leadership than those who do not. *Not supported.*

Hypothesis 2: Transformational teachership positively relates to psychological meaningfulness. *Supported.*

Hypothesis 3: Psychological meaningfulness partially mediates the relationship between transformational teachership and student engagement. *Supported.*

Hypothesis 4: Transformational teachership positively relates to psychological safety. *Supported.*

Hypothesis 5: Psychological safety partially mediates the relationship between transformational teachership and student engagement. *Not supported.*

Hypothesis 6: Transformational teachership positively relates to academic self-efficacy. *Supported.*

Hypothesis 7: Academic self-efficacy partially mediates the relationship between transformational teachership and student engagement. *Not supported.*

Hypothesis 8: Psychological meaningfulness partially mediates the relationship between transformational teachership and student satisfaction. *Supported.*

Hypothesis 9: Psychological meaningfulness partially mediates the relationship between transformational teachership and student effort. *Supported.*

Hypothesis 10: Academic self-efficacy partially mediates the relationship between transformational teachership and student performance. *Not supported.*

DISCUSSION

Overview

This study was an attempt to improve both the organizational and educational literatures on transformational leadership. Specifically, my goals of this study were to propose and test explicit transformational behaviors that teachers could use in the classroom, as well as to advance our understanding of transformational leadership by proposing and testing the theoretical mechanisms by which it exerts its influence on important student outcomes. Overall, I found evidence that students observed an increase in transformational teachership behaviors as a result of the experimental manipulation, suggesting transformational teachership behaviors can be increased through training. However, an increase in observed transformational teaching behaviors did not result in a corresponding increase in student perceptions of transformational teachership, though students in the experimental groups did perform significantly better than students in the control condition. Further, though psychological safety, psychological meaningfulness, and academic self-efficacy were proposed as partial mediators, only psychological meaningfulness demonstrated a strong and consistent relationship with study outcomes (student engagement and effort).

Transformational Teachership Behaviors

To address the lack of attention to the specific behaviors of transformational leadership, I drew on the organizational and educational literature to propose and test specific behaviors of transformational leadership in the classroom, effectively creating a new concept called "Transformational Teachership." Support for the behaviors was mixed. Although students in the experimental conditions did report a significant increase in observed transformational teaching

behaviors from Time 1 to Time 2 (the control group did not), the effect sizes were relatively small (averaging .38 between the two teachers). Thus, even though there was a significant difference in observed behaviors for the transformational teachers, the practical significance of the training intervention was only medium (according to Cohen's 1998 conventions of effect sizes). Further, *perceptions* of transformational teachership did not change. That is, students could objectively observe an increase in transformational behaviors, but that increase did not result in a change in their overall perception of their instructor as transformational.

One possible reason for the incongruence between observed teacher behaviors and changes in perceptions of those teachers as leaders may be because the study did not last long enough. Although the changes in behavior were immediately observable, five weeks was not enough time for those behaviors to manifest as changes in student perceptions. Had the study been longer, changes in student perceptions might have been detected. This explanation is supported by social psychological research, which demonstrates that first impressions (such as data collected at Time 1 in the first week of class) are relatively stable and resistant to change (e.g., DiGirolamo & Hintzman, 1977; Dougherty, Turban, & Callender, 1994). Therefore, it might be that performance is an early indicator of change associated with transformational leadership, but other variables are slower to progress, especially attitudinal variables like student satisfaction.

An alternative explanation is that the transformational teachership behaviors proposed in this study are not related to perceptions of transformational leadership, such that although the teachers in the experimental group demonstrated the behaviors, those behaviors have no bearing on student perceptions of leadership in the classroom. Unfortunately, the results of this study cannot definitively prove or disprove this explanation. However, given the theoretical and

empirical foundation under which the behaviors were created and selected, it is unlikely that the behaviors are unrelated to student perceptions of transformational teachership.

Finally, a realistic constraint that might explain the lack of differences both within and between instructors is that instructors were rated highly on transformational teachership beginning at Time 1. The graduates students selected for teaching Introductory Psychology are selected from a qualified pool of applicants, thus resulting in a potential range restriction of teacher abilities. Because students perceived them as strong teachers from the beginning, there was less room for improvement through the training program intervention; hence, the difference in behaviors (which did have room to change), but not perceptions (which were already rated highly). Results may have been different if the instructors selected for the study were not skilled teachers at the outset.

Engagement, Effort, Satisfaction, and Performance

In addition to trying to understand how transformational teachership can be trained, I was also interested in the impact of transformational teachership on student outcomes such as student engagement, satisfaction with teacher, student effort, and performance. Results indicated that only student performance was significantly impacted, such that students in the experimental groups performed significantly better than students in the control condition. This is especially noteworthy, as performance was assessed by an objective third party.

However, despite the positive influence on performance, there were no consistent differences between groups on student engagement, satisfaction, or effort. One possibility that explains why no differences were found is similar to above: five weeks may not have been long enough to capture the change in student perceptions of their teachers, as attitudes and first

impressions are relatively stable. Had the study been longer, such as an entire semester, changes in student attitudes might have been detected.

A second potential explanation may have been the measurement of the outcome variables. After re-reading the effort scale, it may be that students responded in a way that captures their *general* effort toward their classes, as opposed to the effort exerted specifically for their Introductory Psychology class. That is, the scope of the items may have been more wide-ranging than intended for the purposes of this study. For example, the item "My friends know I start working early and always study late" is a broad statement that could encompass many domains, as opposed to the specific domain targeted in this study (i.e., effort exerted in Introductory Psychology).

Mediators between Transformational Teachership and Relevant Outcomes

The second goal of my study was to advance the understanding of transformational leadership by proposing and testing the theoretical mechanisms by which it exerts its influence on important student outcomes. To this end, I integrated theory from the organizational literature on employee engagement and the educational literature, resulting in a model of transformational teachership that influences student outcomes though psychological meaning, psychological safety, and academic self-efficacy. Results for the proposed mediators were mixed; psychological meaningfulness served as an important mediating variable, but there was little support for psychological safety and academic self-efficacy as critical mediating psychological states.

As predicted, psychological meaningfulness was significantly predicted by student perceptions of transformational leadership. These findings support Smircich and Morgan's (1982) assertion that the "management of meaning" is one of the most powerful influences a

leader can have on followers. The implication of these results are that transformational teachers should seek to actively cultivate a sense of meaning for students, as psychological meaningfulness partially mediated the relationship between transformational teachership and engagement and transformational teachership and student satisfaction, as well as fully mediated the relationship between transformational leadership and effort. Specifically, results support the proposition that transformational teachers serve as an important source of information that students use to construct and interpret what is happening in class (i.e., teachers are important agents of social information processing; Salancik & Pfeffer, 1978). Teachers can improve perceived meaningfulness by drawing attention to certain aspects of class policies, assignments, or exams. In turn, when students perceive the work they are doing is meaningful, they are more likely to report being satisfied with their teacher, engaged in the class, and exert effort.

The second proposed critical psychological state, psychological safety, demonstrated a weak relationship with transformational teachership and student engagement. Although student perceptions of transformational teachership significantly predicted psychological safety, psychological safety did not mediate the relationship between transformational teachership and student engagement. One possible reason that psychological safety did not mediate the relationship between transformational teachership and student engagement is that students may not be as sensitive to evaluation as previously assumed (i.e., the "spotlight effect" was not a factor). A second possibility is that as long as students do not feel overtly threatened, psychological safety may not play a critical role in promoting student engagement. This explanation is supported by 'negativity bias' (Rozin & Royzman, 2001), which hypothesizes that negative events are more potent, dominant, and perceived as more important than positive events. Therefore, it may be that instances of very low safety, such as instructors who belittle or

humiliate their students, are very salient to students, which then influences student engagement. In this sample, where psychological safety did not seem to be concern (mean scores and standard deviations for each instructor indicate a consistently safe environment), it may have been less salient and, therefore, had little impact on student engagement.

The third proposed psychological state, academic self-efficacy, was not supported as a mediator. Though transformational teachership was directly related to academic self-efficacy, it did not mediate the relationship between transformational teachership and student engagement or between transformational teachership and student performance. Of all the findings, these may be the most surprising, given the consistent research findings that have demonstrated the important role of self-efficacy in student outcomes. One explanation as to why academic self-efficacy was not related to student engagement is that although self-efficacy has been related to student learning and performance (e.g., Bandura, 1993; Chemers et al., 2001; Multon et al., 1991; Turner et al., 2009), it may not be related to a student's likelihood to become cognitively, physically, and emotionally immersed in their class and coursework (based on Kahn, 1990). That is, though academic self-efficacy may significantly predict objective outcomes, it does not serve as a critical psychological state that increases the likelihood students will fully invest themselves into their coursework.

A second explanation as to why academic self-efficacy was a poor predictor of outcome variables is students may be poor judges of their own academic abilities, which is supported by the high mean score for academic self-efficacy. That is, even when students were poor performers, they tend to report having strong academic skills. This discrepancy of actual performance versus self-perception is consistent with research on expertise, wherein novice and low performers consistently overestimate their skill on a given task (dubbed the "Dunning-

Kruger Effect;" Kruger & Dunning, 1999). The Dunning-Kruger effect may be particularly important in explaining the findings in this sample, as the majority of participants were in their first year of college. As college freshmen (and therefore, relatively novice), the participants in this study may have had unrealistic expectations about their own performance, especially if the reported self-efficacy was based on their academic experiences in high school (which may not reflect the rigor or skill level required by college courses). Had this study been conducted with more advanced students, academic self-efficacy may have been a stronger predictor of student outcomes.

Theoretical and Practical Contributions

This study contributes to the educational and organizational literatures in several ways. First, I proposed a new model of transformational teachership, one that draws on theory to include psychological states that explain the conditions under which transformational teachership fosters student outcomes; something that has been missing in both the educational and organizational literature. My new model expands transformational leadership to education, and attempts to explain why and how transformational leadership ignites positive follower behavior. Second, the results are based on an experimental design, which supports causal inferences based on the model.

By testing the relationships with an experimental method, my study contributes to causal inferences in the leadership literature (which as of now, are very few). By establishing causal inferences, organizations can be more confident that their interventions will manifest positive outcomes for employees and the organization, effectively ensuring they will receive a return on investment for any resources spent. Without establishing causal relationships, organizations are left with, at best, educated guesses about what will positively change behavior, and at worst, a

haphazard approach at dealing with employee and organizational issues that wastes organizational resources such as time, money, and credibility. Though not all causal relationships were supported, my study is a first to test actual behaviors, not just perceptions.

From a theoretical perspective, causal inferences are important to theory building and understanding key variables in affecting change. Throughout the history and development of the leadership literature, researchers have struggled to understand the mechanisms under which leadership influences follower outcomes (e.g., Contingency Theory, Fiedler, 1967; Path-Goal Theory, House, 1971; Leader Member Exchange Theory; Graen & Uhl-Bien, 1975). As of yet, the field has not converged on a singular understanding of leadership. However, by empirically testing conditions of leadership, the field can continue to revise models and improve understanding of leadership.

In addition, as some researchers have suggested that leadership functions differently in diverse contexts (e.g., military; Judge & Piccolo, 2004), this study contributes substantive knowledge about the boundary conditions of leadership. By applying leadership to the educational context, the field stands to gain insight into different models of leadership. For example, in the educational context, many students only interact with their teachers for a single semester. This context may inform organizational theories on short-term leadership, as many careers are short-term, temporary, or project based (as opposed to employment with a single organization over several years; Kalleberg, 2000). Furthermore, organizations are becoming increasingly complex, and integrating interdisciplinary components benefits leadership theory by reflecting the intricacy of leader-follower relations and organizational context (Avolio, 2007).

Finally, this study contributes to the organizational literature by providing a practical approach to transformational leadership by proposing, theoretically supporting, and testing

specific behaviors of transformational leadership within an educational context. As a field, organizational psychology is based on the processes through which organizations change (change process theory), and the types of interventions that lead to change (implementation theory; Austin & Bartunek, 2003). The development of the transformational training intervention speaks to the latter goal of organizational psychology.

This study contributes to the educational literature by providing theoretical support to hypothesized relationships and creating a behaviorally based training program that can be implemented in schools and universities. By encouraging instructors to implement transformational teaching behaviors, increases in student performance should be expected. Further, though there were not significant differences in the other outcome variables of interest, the overall experience of students in the study was extremely positive, suggesting other potential benefits not measured in this study such as well-being.

To date, the educational leadership lacks a solid understanding of *why* transformational should lead to positive outcomes. By proposing and testing a model of transformational teachership, the current study is a first of its kind in the educational literature. Second, this study contributes to the educational literature by developing a teacher training program that utilizes specific, actionable behaviors. Although other studies have used qualitative methods to propose transformational teacher behaviors (e.g., Bolkan & Goodboy, 2011), this study is the first to not only test those behaviors, but create the process under which teachers are trained to become transformational.

Strengths

Strengths of the current study include the use of an appropriate sample from a state university, the theoretical foundation used to develop the study framework, and experimental design efforts to reduce common method variance.

First, participants of this study are an appropriate sample to measure the constructs of interest. This study is specifically centered on the educational context, so using students as participants is not a convenience sample, as it is in many organizational studies; it is the best sample to test the research questions.

Furthermore, one of the greatest strengths of this study is that it captures an authentic relationship between leaders and followers. Specifically, the relationship is long term (participants are not just meeting the leader during a brief lab study) and the leader is an actual person (as opposed to participants responding to a vignette, video, or other hypothetical leadership scenario). Thus, the strength of this study is that it possesses high experimental realism and high mundane realism, which supports the external validity of the study findings.

A second strength of this study is the strong theoretical foundation upon which the framework of the study was built. By drawing on theory and prior research from organizational psychology and educational literatures, the current study captured accurate reflections of the study variables and relationships.

Third, the current study was designed using an experimental framework within which several different methods were used to collect data. By using an experimental design, there is more support for causal inferences of the relationship investigated in this study. Furthermore, the study methodology provides improved internal validity. That is, by using teachers of similar experience, teaching the same class, the same semester, to similar students, the study design

reduced the chance for variance from variables unrelated to the study (such as trying to compare an instructor in an upper level chemistry class to an instructor in a lower level humanities class). In addition to the experimental design, the current study used several forms of data collection, including self-report, behavioral observations, and objective performance outcomes (student performance on writing assignments as graded by neutral and outside graduate teaching assistants), thereby reducing the likelihood of common method variance (CMV; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). CMV occurs when the measurement approach leads to variance attributed to the measure rather than the construct (Doty & Glick, 1998). By integrating several measurement methods, the current study is less likely to suffer from CMV issues than if it used survey data alone (or any other single method). In addition, data for this study were collected at two different time points separated by five weeks, a procedural approach which further reduces the likelihood of CMV (Podsakoff, et al., 2003), and allowed for the potential to develop transformational behaviors and students to see them.

Limitations

One potential limitation of the current study is the graduate student teachers were all perceived as highly transformational at the start of the study. This is likely caused by the selection of these teachers, as graduate students are selected to teach their own sections of Introductory Psychology because they have demonstrated successful teaching in the past. Therefore, it is likely that ceiling effects at Time 1 reduced the value of the behavioral training intervention and reduced the predictive validity of student perceptions of transformational teachership.

Another possible limitation is the use of a single sample study (i.e., graduate student instructors who teach general psychology to mostly first year students). Such a specific demographic may limit the generalizability of results to other populations.

The last notable limitation is in regard to sample size. Despite having a large overall sample (540 participants), only 273 completed surveys at both Time 1 and Time 2. Ideally, the data would have been analyzed using structural equation modeling, which permits the simultaneous testing of latent variables and accounts for measurement error. Unfortunately, the large number of parameters dictated by the full model required more participants than were available for this study. Therefore, data analysis relied on regression, which does not account for measurement error or allow for the simultaneous tests of multiple dependent variables.

Future Research

This study serves as preliminary evidence for the causal relationship between transformational teachership and student outcomes, as well as the importance of psychological meaningfulness. However, the proposed mediators of psychological safety and academic self-efficacy did not seem to fit the data well. Therefore, future researchers from both organizational and educational fields should continue to investigate the mechanisms that underlie the relationship between transformational teachership and important student/employee/organizational outcomes.

In addition, this study found that although the behavioral intervention was successful in terms of increasing transformational teaching behaviors, those gains did not influence student perceptions of their teacher as leaders. As previously discussed, it may be that the length of the study (five weeks) was not sufficient to adequately capture a change in attitudes. Future research

should extend the current study by measuring change in outcomes over the entire semester, possibly using longitudinal growth modeling.

Another possible avenue for future research is in understanding the conditions under which an intervention aimed at enhancing transformational teaching behaviors may be more efficacious. In this study, it is likely that the participating instructors were already high on perceived transformational teachership (given the high means at Time 1). The high means at Time 1 suggest the possibility that the instructors selected for this study were already outstanding teachers, and thus, the there was little room for improvement. Therefore, it may be important for future researchers to address the possibility that low skilled teachers would be more likely to benefit from such an intervention than teachers already perceived as skilled or transformational.

Finally, future researchers should reflect on how different disciplines, class sizes, and student characteristics (e.g., first year students compared to more senior students) would influence the efficacy of the training intervention and the relationship among variables of interest (e.g., the mediating variables proposed in this model). For example, the number of students in a class could influence perceptions of psychological safety, such that small classes, where individual contributions are more salient, may increase the importance of psychological safety. In addition, some disciplines are notoriously more difficult, which could influence student perceptions of academic self-efficacy.

Conclusion

As higher education evolves, universities are looking for teachers to excel in the classroom. Despite an abundance of literature on transformational leadership in the fields of organizational psychology and education, there has been a deficiency of research on training transformational leadership and understanding how transformational leadership positively

influences follower outcomes. This study contributes to the organizational and educational literatures by providing specific behaviors for teachers to use, testing the efficacy of a leadership training program, and demonstrating the important role psychological meaning has in mediating the relationship between transformational teachership and student outcomes.

Table 1

Descriptive Statistics and Intercorrelations among Study Variables (N=351-462; depending on the variable)

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9
1.Transformational Teacher Behaviors	5.82	0.69	(.87)								
2. Perceptions of TF Teachership	5.63	0.72	0.72**	(.94)							
3. Academic Self-Efficacy	6.58	1.85	0.16**	0.23**	(0.96)						
4. Meaning	3.88	0.69	0.45**	0.46**	0.13**	(0.94)					
5. Safety	3.86	0.52	0.48**	0.53**	0.23**	0.32**	(0.74)				
6. Student Engagement	3.83	0.67	0.29**	0.30**	0.01	0.44**	0.24**	(0.95)			
7. Effort	4.71	1.14	0.16*	0.20**	0.09	0.28**	0.17**	0.56**	(0.93)		
8. Satisfaction	5.99	0.93	0.33**	0.39**	0.06	0.33**	0.32**	0.51**	0.25**	(0.86)	
9. Performance	0.81	0.22	0.06	0.13**	0.07	0.07	0.07	0.16*	0.22**	0.19**	(n/a)

Note. The alpha internal-consistency reliability coefficients appear in parentheses along the diagonal. *$p < .05$, **$p < 0.01$.

Table 2

Fit Indices for Confirmatory Factor Analyses

Model	χ^2	*df*	CFI	RMSEA	90% CI for RMSEA
A: Perception of TF Teachership (21 item scale)	3585.87	210	0.68	0.11	0.11–0 .11
B: Academic Self-Efficacy (10 item scale)	2573.86	45	0.82	0.17	0.15-0.18
C: Meaning	159.15	10	0.93	0.18	0.16-0.20
D: Safety (6 item scale)	372.06	15	0.54	0.19	0.16-0.21
F: Engagement as 3-factors	870.99	132	0.87	0.13	0.12-0.13
G: Engagement as higher-order factor (with 3 lower-order factors)	871.10	132	0.87	0.13	0.12-0.13
H: Effort	810.41	36	0.73	0.25	0.23-0.26
J: Satisfaction	49.08	3	0.94	0.21	0.16-0.26

Note. χ^2 = Chi-square; *df* = degrees of freedom; CFI = comparative fit index; RMSEA = root mean square error of approximation. 90% CI RMSEA = 90% confidence interval for RMSEA

Table 3

Means and Standard Deviations for Time 1 and Time 2 Variables for Experimental Instructor #1 (N=98)

	Time 1		Time 2	
Variable	*M*	*SD*	*M*	*SD*
1.Transformational Teacher Behaviors	5.70	0.60	5.82*	0.54
2. Perceptions of TF Teachership	5.64	0.69	5.57	0.69
3. Academic Self-Efficacy	6.39	2.08	6.67	1.78
4. Meaning	3.96	0.56	3.90	0.64
5. Safety	3.83	0.54	3.80	0.58
6. Student Engagement	3.91	0.54	3.90	0.56
7. Effort	4.51	1.12	4.82**	1.20
8. Satisfaction	5.98	0.74	6.12	0.72

Note. $*p < .05$, $**p < 0.01$, indicate significant difference between Time 1 and Time 2.

Table 4

Means and Standard Deviations for Time 1 and Time 2 Variables for Experimental Instructor #2 (N=132)

	Time 1		Time 2	
Variable	*M*	*SD*	*M*	*SD*
1.Transformational Teacher Behaviors	5.74	0.72	6.17**	0.87
2. Perceptions of TF Teachership	5.74	0.73	5.66	0.89
3. Academic Self-Efficacy	6.58	1.80	6.55	2.05
4. Meaning	3.86	0.77	3.72*	0.85
5. Safety	3.84	0.51	3.92	0.60
6. Student Engagement	3.94	0.67	3.83*	0.74
7. Effort	4.70	1.03	4.82	1.14
8. Satisfaction	5.84	0.96	5.95	0.99

Note. $*p < .05$, $**p < 0.01$, indicate significant difference between Time 1 and Time 2.

Table 5

Means and Standard Deviations for Time 1 and Time 2 Variables for Control Instructor (N=44)

	Time 1		Time 2	
Variable	*M*	*SD*	*M*	*SD*
1.Transformational Teacher Behaviors	5.80	0.74	5.98	0.55
2. Perceptions of TF Teachership	5.52	0.63	5.53	0.78
3. Academic Self-Efficacy	6.81	1.75	6.89	1.64
4. Meaning	3.85	0.67	3.94	0.71
5. Safety	3.93	0.52	3.88	0.53
6. Student Engagement	3.90	0.53	3.86	0.64
7. Effort	4.42	1.16	4.63*	1.12
8. Satisfaction	6.19	0.72	6.07	0.89

Note. $*p < .05$, $**p < 0.01$, indicate significant difference between Time 1 and Time 2.

Table 6

Means and Standard Deviations of Student Performance across Instructors (N=177, 230, and 93, respectively)

	Performance	
Instructor	*M*	*SD*
1. Experimental #1	0.83	0.19
2. Experimental #2	0.82	0.22
3. Control #1	0.74	0.27

Note. $*p < .05$, $**p < 0.01$.

Table 7

Summary of Regression Analyses testing the effect of Transformational Teachership on Meaning, Safety, & Academic Self-Efficacy

Hypothesis	Independent	Dependent	β	se β	F	R^2
2	Transformational Teachership	Psychological Meaning	.46**	.04	122.55	.21
4	Transformational Teachership	Psychological Safety	.53**	.03	177.85	.28
6	Transformational Teachership	Academic Self-Efficacy	.23**	.12	25.04	.05

Note. N = 197, β = standardized regression coefficients, se β = std error, * $p < .05$, ** $p < .01$

Table 8

Summary of Regression Analyses for Variables Mediating the Relationship between Transformational Teachership and Student Outcomes

Hypothesis	Independent	Dependent	β	se β	F
3	Transformational Teachership	Student Engagement	.30**	.05	35.92**
	Meaning		.38**	.06	
5	Transformational Teachership	Student Engagement	.30**	.09	14.77**
	Psychological Safety		.11	.01	
7	Transformational Teachership	Student Engagement	.30**	.05	13.81**
	Academic Self-Efficacy		-.04	.02	
8	Transformational Teachership	Satisfaction	.39**	.07	29.96**
	Psychological Meaning		.20**	.08	
9	Transformational Teachership	Effort	.20**	.10	13.14**
	Psychological Meaning		.24**	.11	
10	Transformational Teachership	Performance	.13**	.02	3.88*
	Academic Self-Efficacy		.04	.01	

Note. β = standardized regression coefficients, se β = std error, * $p < .05$, ** $p < .01$

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APPENDIX

Appendix A: Measures

Self-Efficacy (Solberg et al., 1998; Solberg, O'Brien, Villarreal, Kennel, & Davis, 1993; Solberg & Villarreal, 1997)

Based on your experiences, please indicate the extent to which you feel confident with each of the following statements by clicking your response on a scale from 0 (not at all confident) to 9 (extremely confident) that most closely corresponds with your opinion.

In my introductory psychology class, I am confident in my ability to….

1	Research a term paper
2	Write a course paper
3	Do well on my exams
4	Manage my time effectively
5	Take good class notes
6	Keep up to date with my school work
7	Understand my textbook
8	Participate in class discussions
9	Ask a question in class
10	Talk to my instructor
11	Talk with academic and support staff (class TA, writing TA, etc.)
12	Make friends in class

Transformational Leadership Student Self-Report (Podsakoff, MacKenzie, Moorman, & Fetter, 1990).

Please respond to the following questions regarding your Introductory Psychology teacher. Based on your experiences with your teacher, please indicate the extent to which you agree or disagree with each of the following statements by circling your response on a scale from 1 (strongly disagree) to 7 (strongly agree) that most closely corresponds with your opinion.

My Psychology teacher….

1	Shows me that she/he expects a lot from me
2	Acts without considering my feelings (R)
3	Paints an interesting picture of the future for the class
4	Leads by "doing," rather than simply by telling

5	Shows respect for my personal feelings
6	Provides a good model for me to follow
7	Behaves in a manner thoughtful of my personal needs
8	Insists on only the best performance
9	Treats me without considering my personal feelings (R)
10	Has a clear understanding of the goals of the class (where the class is going)
11	Does not settle for mediocre performances
12	Inspires me by sharing his/her goals for learning
13	Challenges me to think about problems in new ways
14	Is able to get others to commit to his/her class goals
15	Asks questions that prompt me to think
16	Has stimulated me to rethink the way I do things
17	Always seeks new opportunities for the class to learn
18	Leads by example
19	Has ideas that challenge me to reexamine some of my basic assumptions
20	Fosters collaboration among classmates
21	Encourages classmates to be team players
22	Gets the class to work together
23	Develops a team attitude and spirit among students

Transformational Teachership Student Behavioral Checklist

Please respond to the following questions regarding the Introductory Psychology teacher you are observing. Based on your observations, please indicate the extent to which you agree or disagree with each of the following statements by circling your response on a scale from 1 (strongly disagree) to 7 (strongly agree) that most closely corresponds with your opinion.

This Psychology teacher….

	Item
1	Knows the names of his/her students
2	Consistently asks for student feedback
3	Takes time to answer student questions in class
4	Uses a variety of teaching techniques (class demos, videos, etc.)

5	Uses examples that are personally relevant
6	Tests students' knowledge during class (e.g., i-clickers)
7	Asks questions that require thoughtful answers
8	Helps students when they struggle to understand what is being said in class
9	Started lecture with the goals of the class
10	Shares personal stories as appropriate
11	Respects students opinions by thanking students when they participate
12	Treats students as thoughtful adults with their own values and opinions

Student Engagement (Rich et al., 2010)

Please indicate the extent to which you agree or disagree with each of the following statements by circling your response on a scale from 1 (strongly disagree) to 5 (strongly agree) that most closely corresponds with your opinion.

1.	I work with intensity in this class
2.	I exert my full effort in this class
3.	I devote a lot of energy to this class
4.	I try my hardest to perform well in this class
5.	I strive as hard as I can to complete my work in this class
6.	I exert a lot of energy on my work in this class
7.	I am enthusiastic about this class
8.	I feel energetic about this class
9.	I am interested in this class
10.	I am proud of my work in this class
11.	I feel positive about this class
12.	I am excited about this class
13.	My mind is focused during class
14.	I pay a lot of attention to this class
15.	I concentrate on my work for this class
16.	I focus a great deal of attention on my work in this class
17.	I am absorbed by this class
18.	I devote a lot of attention to this class

Meaning (May, Gilson, & Harter, 2004)

Please indicate the extent to which you agree or disagree with each of the following statements by circling your response on a scale from 1 (strongly disagree) to 5 (strongly agree) that most closely corresponds with your opinion.

1	What I learn in this class is very important to me
2	The class topics are personally meaningful to me
3	The work I do in this class is worthwhile
4	This class is significant to me
5	I feel that what I learn in this class is valuable
6	The class is meaningful to me

Safety Adapted (Edmondson, 1999)

Please indicate the extent to which you agree or disagree with each of the following statements by circling your response on a scale from 1 (strongly disagree) to 5 (strongly agree) that most closely corresponds with your opinion.

1	If you make a mistake, the instructor will humiliate you
2	It is okay to bring up problems and tough issues
3	People in this class sometimes reject others just for being different
4	It is safe to take a risk
5	It is difficult to ask others for help
6	No one would deliberately act in a way that undermines my efforts
7	My unique skills and talents are valued and utilized in class

Effort (Brown & Leigh, 1996)

Please indicate the extent to which you agree or disagree with each of the following statements by circling your response on a scale from 1 (strongly disagree) to 7 (strongly agree) that most closely corresponds with your opinion.

1.	Other people know me by the long hours I study.
2.	My friends know I start working early and always study late.
3.	Among my peers, I'm always the first to start studying and the last to stop.
4.	Few of my peers put in more hours weekly than I do.
5.	I put in more hours throughout the year than most students do.
6.	When there's an assignment to be done, I devote all my energy to getting it done.
7.	When I work, I do so with intensity.

8.	I work at my full capacity in all of my class duties.
9.	I strive as hard as I can to be successful in my class.
10.	When I work, I really exert myself to the fullest.

Supervisor Satisfaction (Adapted from Warr, Cook, & Wall, 1979)

The next set of items deals with various aspects of the class. Please indicate how satisfied or dissatisfied you feel with each of these features of your PSY 100 class by circling your response on a scale from 1 (very dissatisfied) to 7 (very satisfied) that most closely corresponds with your opinion.

1.	Your professor
2.	Relations between students and teacher
3.	The way class is managed
4.	The recognition you get for good work

Appendix C: Demographics & Control Variables

1. What is your gender?
    a. Male
    b. Female
    c. Other
2. Which of the following best classifies your race/ethnicity?
    a. Caucasian
    b. African-American
    c. Hispanic
    d. Alaskan/Pacific Islander
    e. Other
3. What is your current age as of your last birthday?
4. What year are you in college?
    a. Freshman
    b. Sophomore
    c. Junior
    d. Senior
    e. Older than a senior
5. How many college courses have you taken?
    a. Zero
    b. 1-5
    c. 6-10
    d. 11-15
    e. 16-20
    f. 21-25
    g. 26-30
    h. 31-35
    i. 36-40
    j. More than 40
6. Using a percentage, what grade do you expect to receive in this class? (e.g., 78%)
7. How difficult would you rate this class?
    a. Very difficult
    b. Difficult

c. Neither easy nor difficult
d. Easy
e. Very Easy

8. Which section of introductory psychology are you enrolled in?
9. Who is your introductory psychology instructor?
    a. Tommy
    b. Sara
    c. Diana
    d. Hillary

Socially Desirable Responding (Control; Paulhus, 1984)

[items 1-9 are impression management, 10-18 are self-deception]

*Please respond with **True** or **False** to each item below. Where asked a question, consider **True as Yes and False as No**.*

1	Do you tell the truth?
2	When you call in sick from work, are you as sick as you say you are?
3	I am always courteous, even to people who are disagreeable.
4	Once in a while, I will laugh at a dirty joke.
5	I sometimes try to get even, rather than forgive and forget.
6	I always apologize to others for my mistakes.
7	Would you declare everything at customs (after international travel), even if you knew that you could never be found out?
8	Sometimes at elections, I vote for candidates I know little about.
9	I am sometimes irritated by people who ask favors of me.
10	People often disappoint me.
11	Life is a strain for me most of the time.
12	I worry quite a bit over possible misfortunes.
13	Have you ever thought that your parents hated you?
14	I have several times given up doing something because I thought too little of my ability.
15	In a group of people, I have trouble thinking of the right things to talk about.

Positive and Negative Affectivity (control; Watson, Clark, & Tellegen, 1988)

The following scale consists of a number of words that describe different feelings and emotions. Indicate to what extent you generally feel this way, that is, how you feel on the average.

1	Interested
2	Distressed
3	Excited
4	Upset
5	Strong
6	Guilty
7	Scared
8	Hostile
9	Enthusiastic
10	Proud
11	Irritable
12	Alert
13	Ashamed
14	Inspired
15	Nervous
16	Determined
17	Attentive
18	Jittery
19	Active
20	Afraid

Appendix D: Debriefing Information

Debriefing: Thank you for your participation!

The purpose of this study was to assess the relationship between leadership and engagement. Engagement is simply how involved someone is in a given task. In this study, leadership was referring to the behaviors of your psychology teacher. We expect that participants' engagement in their class will differ depending on how favorable they perceive their leader.

You should understand how your data will be used. Your responses on the measures will be combined with the responses of all other participants to examine the hypothesized relationships. Your name has not been recorded with your data, and there will be no way for anyone to trace your responses back to you as an individual. Should you choose to withdraw your data, you have the right to do so and should inform the principal investigator, Janet Peters at weidjm21@lamar.colostate.edu, or Zinta Byrne, Ph.D. at Zinta.Byrne@colostate.edu, as soon as possible.

If you would like to receive a summary of the results of the study, please fill out the box below with your email address. In the meantime, if you have any questions or concerns about the study, please contact Janet Peters at weidjm21@lamar.colostate.edu or Zinta Byrne, Ph.D. at Zinta.Byrne@colostate.edu.

If you experienced any distress during the course of this study or feel distressed now, afterwards, and would like to speak to a counselor, please contact the CSU University Counseling Center at 970-491-6053.

Thank you very much for your participation in this study, and please do not discuss it with anyone else so that we can protect the integrity of our results.

Thank you so much for your time and participation!

Appendix E: Training Materials

Dimension	Behavior
IC	Learning student names
IC	Sending individualized feedback emails (after exams, papers, etc.)
IC	Personalized content (solicits feedback about how class is going, makes adjustments)
IC	Conveyed interest (takes an interest in students personal lives, asks how they are doing)
IC	Availability (makes individual appointments for office hours, meets in different locations)
IC	Special considerations (helps students with unique circumstances, flexible testing conditions, etc.)
IS	Interactive teaching (using multiple approaches, including videos, songs, class demos, and in-class activities)
IS	Challenging students (creates demanding exercises, requires evidence to support claims, asks follow up questions to in-class participation)
IS	Independent thought (asks students to come to their own conclusions, does not provide the answer to every question, encourages students to look up answers to their own questions)
IS	Content relevance (using activities that relate to students, examples that relate to the "real" world)
IS	Opportunities for learning (allowing students to test their knowledge through quizzes, in class activities, i-clickers, or other mechanisms)
IM	Optimism (reassuring students before exams, encouraging them to persist even after failure, explaining other opportunities to earn points)
IM	Mastery orientation (emphasizing the importance of learning rather than performance, conveying failure as a developmental opportunity, providing resources for future improvement)
IM	Performance goals (sets high but realistic goals for class performance, challenges students to perform better than on previous exams/papers/quizzes)
IM	Self-Fulfilling prophecy (treating students as capable and responsible, reminding them of their previous accomplishments)
IM	Helpful (helps students when they struggle to understand what is being said in

	class)
II	Caring (demonstrates empathy in written and verbal communication)
II	Respect (treats students as individuals who have their own values, interests, thoughts, and priorities; allows for different points of view)
II	Self-Disclosure (tells appropriate stories that relate to subject matter, explain experiences with class content)
II	Learning goals (sets goals for each class, reminds students of the "bigger picture" of why they are in class/college)
II	Enthusiasm (smiles during class, explains why material is interesting and relevant, varies tone of voice to convey points)
II	Appreciation (thanks students for participation, creating a context for learning)