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Transformational Leadership and Teaching Assistants' Self-Efficacies*

Dönüşümcü Liderlik ve Öğretim Asistanlarının Öz-yeterlikleri

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ABSTRACT: The overall purpose of this study was to investigate the relationship between transformational leadership behaviors of faculty supervisors and the graduate teaching self-efficacies of graduate teaching assistants. Quantitative data were collected on three surveys including a demographic survey, MLQ form 5x (only transformational leadership items), and Graduate Teaching Self-Efficacy Scale (GTSES). The statistical tests carried out were regression, multiple regression, and logistic regression along with descriptive statistics. Findings showed none of the transformational leadership behaviors (i.e., idealized influence behavior, idealized influence attribute, inspirational motivation, individualized consideration, and intellectual stimulation) of faculty supervisors were statistically significant predictors of graduate assistant teaching self-efficacies. There was a positive statistically significant relationship between number of years as a TA and teaching self-efficacy [p = .008], Teaching self-efficacies of the TAs significantly predicted their satisfaction as a TA [(Hosmer & Lemeshow) x^2 = 3.762, p = .807]. Transformational leadership behaviors of faculty supervisors predicted the satisfaction of TAs graduate teaching assistants [Model $x^2(1)$ = 41.03, p < .05].

Keywords: transformational leadership, self-efficacy, teaching assistant.

ÖZ: Bu çalışmanın amacı öğretim üyelerinin dönüşümcü liderlik davranışlarıyla öğretim asistanlarının öğretim öz-yeterlikleri arasındaki ilişkiyi araştırmaktır. Nicel veriler demografi anketi, MLQ 5x formu (yalnızca dönüşümcü liderlik maddeleri) ve Öğretim Asistanı Öz-yeterlik Ölçeği (GTSES) ile toplanmıştır. Regresyon, çoklu regresyon, lojistik regresyon ve betimleyici istatistikler ile analiz yapılmıştır. Bulgular öğretim üyelerinin dönüşümcü liderlik davranışlarının hiçbirinin (idealize edilmiş etki davranışı, idealize edilmiş etki atıf, ilham verici motivasyon, bireyselleştirilmiş ilgi ve entelektüel uyarım) öğretim asistanlarının öğretim öz-yeterliklerini yordamada istatistiki bir öneme haiz olmadığını göstermiştir. Öğretim asistanlarının asistanlıktaki yılları ile öğretim öz-yeterlikleri arasında pozitif bir ilişki bulunmuş [p = .008], ayrıca öğretim asistanlarının öz-yeterliklerinin öğretim asistanlığı memnuniyetlerini yordadığı [(Hosmer & Lemeshow) x^2 = 3.762, p = .807] saptanmıştır. Öğretim üyelerinin dönüşümcü liderlik davranışlarının öğretim asistanlarının memnuniyetlerini yordadığı gözlenmiştir [Model $x^2(1)$ = 41.03, p < .05].

Anahtar kelimeler: dönüşümcü liderlik, öz-yeterlik, öğretim asistanı.

* This study is part of the author's dissertation titled "The Relationship Between Transformational Leadership Behaviors of Faculty Supervisors and Self-efficacies of Graduate Assistants".

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Introduction

Since the establishment of the first higher education institution in U.S. more than three hundred years ago, the importance of higher education has never lost its significance. Lawrence (2006) posits that the underlying source of progress in the Industrial Age had been natural resources and manufacturing of goods, whereas the shift from it to the Information Age has brought out the importance of knowledge and intellectual capital of nations. The still prevailing mission of universities, which is knowledge creation (i.e. research) and teaching, has appointed colleges and universities as the engine of advancement and stressed the vitality of higher education institutions as the womb of knowledge, which promises economic progress (Lawrence, 2006).

The statistics for the graduate enrollment in 2016 indicate that slightly over 3 million people enrolled in graduate programs, while it is projected that enrollment will probably exceed 3.3 million in the year 2025 (NCES, 2016). In higher education, graduate education has especially a very important place. In fact, the Council of Graduate Schools (CGS, 2007) chooses "Backbone of American Competitiveness and Innovation" as the title for their report in which the importance of graduate education is underlined. The report calls for action to strengthen the U.S. educational system as part of a national strategy to perpetuate the global leadership of U.S. and "economic growth and prosperity" (CGS, 2007, p.1). In addition, historically and traditionally, graduate schools of arts and sciences were the centers that conducted research and produced researchers (Scott, 2006).

One of the unique features of U.S. graduate education is the phenomenon of graduate assistants, who play an important role in undergraduate education in most large research-oriented universities and colleges (Luft, Kurdziel, Roehrig, & Turner, 2004). Wert (1998) reports that approximately 40% of the undergraduate level courses in research universities are taught by graduate teaching assistants and they assist in about 60% of the teaching of introductory courses for the first- and second-year undergraduates. A similar notion is stressed by Austin (2002), who states that teaching assistants shoulder much of the undergraduate instruction load at many large research universities and the research assistants support the research activities. The roles of graduate assistants have changed and increased over the years due to high demand in introductory courses in undergraduate education (Park, 2004). The tasks of graduate assistants range from setting up labs, computer stations, grading papers for faculty, leading discussions as part of a larger lecture, tutor undergraduate students to designing and teaching a course (Park, 2004; Wert, 1998). On the surface teaching or research assistantships may seem to provide graduate students, who are also potential future faculty and researchers, with ample experience for teaching and research, but in reality their work load is more geared toward meeting the needs of the institution or faculty under whom they are working (Austin, 2002; Park, 2004).

The relationship between the graduate assistants and the faculty under whom they are working can be examined from the leader-follower perspective. Examination of the leadership concept, thus, would provide a significant contribution to the understanding of the graduate assistant-supervising faculty relationship. The study of leadership is not a phenomenon that pertains to only modern and contemporary times. It has been the focus of attention of ancient Greek philosophers and has fascinated not only ordinary

people, but also scholars (Den Hartog & Koopman, 2001; Northouse, 2007; Yukl, 2010). Leaders have been considered to be the cause of success or failure in battles, civilizations, corporations, educational institutions (Den Hartog & Koopman, 2001; Yukl, 2010). Leadership has become the center of organizational research for a long time since leaders make a difference in their organizations, no matter what type of organizations they are. The leadership concept is not new to us and even though the concept of leadership has always intrigued not only ordinary people but also scholars, it was not scientifically and academically investigated until the twentieth century (Judge & Bono, 2000; Yukl, 2010). The second part of the twentieth century there has been considerable amount of research committed to leadership and its effectiveness (Judge & Bono, 2000) and the precursors of leadership effectiveness, such as traits, abilities, and behaviors (Yukl, 2010).

Leadership has been considered to be a phenomenon beyond contingent reinforcement (i.e., rewards offered in exchange of successful goal completion) by scholars of various disciplines (Bass, 1998). Different leadership theories attempt to explain leadership from different perspectives. Some focus on the leaders without considering the context or followers, others try to match the leaders with the situations.

The leadership concept, which was not academically investigated until the twentieth century, started to gain attention in the second part of the twentieth century and there has been considerable amount of research committed to leadership and its effectiveness since then (Judge & Bono, 2000).

The effectiveness of leadership in educational settings has been widely researched. Leadership in schools, universities, and in other institutions of education has been examined through various leadership theories. Bass's (1985) transformational leadership theory is one of the most frequently applied theories of leadership in leadership research in education. However, the majority of the research focused on the leadership styles of school administrators, superintendents, and department chairs, school teachers, and their impact on their followers such as teachers, administrators, faculty, and students. The dyadic relationship between graduate assistants and the faculty as their immediate supervisors has not been investigated from a leader-follower perspective. The publications regarding the effectiveness of graduate assistantship usually include teaching assistants and the training programs that aim to increase teaching effectiveness of teaching assistants.

The report of the commission on the future of higher education (U.S. Department of Education, 2006) clearly calls higher education the "treasured national assets" (p.33), while addressing some of the deficiencies in higher education. The commission's report claims that the U.S. higher education is no longer capable of answering to the changing needs of knowledge economy and should revise its policies to fix these shortcomings (U.S. Department of Education, 2006). Similar analyses are made in the report of the Council of Graduate Schools (2007), which makes recommendations to the higher education institutions, business, and policymakers. Even though both reports acknowledge the importance of changes that should be made in higher education in U.S., they both seem to ignore two of the main stakeholders of higher education and the importance of their relationship on the educational outcome of that relationship: faculty and graduate assistants.

The lack of research on the dyadic relationship between the graduate assistants and the faculty in the position of their immediate supervisors and impact of this relationship on the self-efficacies of graduate assistants comprise a gap in the literature. Investigating the dyadic relationship between graduate students and their immediate supervisors (i.e., faculty) in the context of leader-follower relationship and the impact of the leadership behaviors of faculty supervisors on self-efficacy can contribute significantly to the effectiveness of not only graduate education but also higher education in U.S. The findings of this study can be used in leadership training and faculty development programs of colleges and universities.

The overall purpose of the study is to investigate the relationship between transformational leadership behaviors of faculty supervisors and self-efficacies of graduate assistants in higher education institutions. The research questions that are investigated in this study are:

1 What is the relationship between transformational leadership behaviors of faculty supervisors and the graduate teaching assistants' teaching self-efficacies?
2 What is the relationship between the number of years as a TA and TAs' teaching self-efficacy?
3 What is the relationship between teaching self-efficacies of the TAs and their satisfaction as TAs?
4 What is the relationship between transformational leadership behaviors of faculty supervisors and GAs' satisfaction as GAs?

Review of the Literature

Leadership

Leadership has played a central interest of human kind throughout history, which can be traced in great works in ancient times, such as in Homer's Iliad and Odyssey and Plato's Republic, and in both fiction and non-fiction works of literature (Day & Zaccaro, 2007; Den Hortag & Koopman, 2001). History, in fact, is considered to be about leaders (Bass, 1990). Day and Zaccaro (2007) state that leadership was not a direct focus of early applied psychology prior to the first direct study of leadership in industrial settings published in 1925 by Craig and Charters and in an industrial and organizational psychology text published in 1932 by Viteles. Before above-mentioned works, there had been popular-press books on leadership (Day & Zaccaro, 2007). According to Day and Zaccaro (2007), World War II had a great impact on study of leadership due to the fact that there were many social scientists involved in the war efforts during the WWII period.

It is not possible to reach a consensus over a single definition of such a concept that has fascinated human kind. In fact, after his extensive review of the leadership literature, Stogdill (1974) points out that "there are almost as many definitions of leadership as there are persons who have attempted to define the concept" (p.259). Den Hartog and Koopman (2001) suggest that any attempt to define leadership is prone to the emphasis that the definer puts on. Thus, the definition would vary according to the "leader abilities, personality traits, influence relationships, cognitive versus emotional orientation, individual versus group orientation, and appeal to self versus collective

interests" (Den Hartog & Koopman, 2001, p.166). In addition, some leadership definitions emerge from descriptive or prescriptive approaches, while others are results of the emphasis that is put on the three domains of leadership: leader, follower, or relationship (Den Hartog &Koopman, 2001). Despite the innumerable definitions of leadership, "traits, behaviors, influence, interaction patterns, role relationships, and occupation of an administrative position" are the common themes of leadership definitions (Yukl, 2010, p.2). Due to the complex and multifaceted nature of leadership, it cannot have only one correct definition (Yukl, 2010).

Leadership had been approached mainly from trait, style, and contingency perspectives before 1980s (Den Hartog & Koopman, 2001). Bryman (1992) posits that trait approaches of leadership were at the core of leadership studies, which considered leaders were born and inherently possessed leadership abilities, until 1940s. Following the trait approaches, leadership studies started to focus on the style, that is the way the leaders lead from late 1940s to late 1960s. The late 1960s and early 1980s witnessed the emergence of contingency approaches of leadership, which was a shift from trait or style approach to the situation and context that affected leadership. The new leadership approaches (including charismatic/transformational leadership) have emphasized the vision of the leaders and their inspirational charisma that cultivated loyalty and emotional attachment in the followers since early 1980s (Bryman, 1992). Den Hartog and Koopman (2001) state that the eras that the leadership approaches were heavily studied are not clear-cut periods; however, it can give us an idea of the history of the studies of leadership. The time periods allotted for the aforementioned leadership approaches should not be understood as the prior approaches have been abandoned; rather, it is an indication in the shift of the leadership emphasis (Bass, 1990; Bryman, 1992; Den Hartog & Koopman, 2001).

Shackleton and Wale (2000) posit that group, influence, and goal are the three core components of almost all leadership definitions. There are so many definitions and classifications of leadership, many of which include leadership as the focus of group processes, as a trait or characteristics, as a behavior, as the power relationship between leaders and followers, as a transformational process, and leadership as a set of skills (Bass & Bass, 2008; Northouse, 2007; Yukl, 2010). Those who view leadership as the focus of group processes assert that the leader is in the center of a group and he or she is the one that maintains change (Bass & Bass, 2008). The trait perspective is one of the most common views of leadership (Yukl, 2010). According to this view, leadership is a characteristic that certain individuals are born with. These qualities or special characteristics include physical, personality, and ability features (Northouse, 2007). The third approach considers leadership as actions and behaviors of leaders that foster change (Bass & Bass, 2008; Northouse, 2007; Yukl, 2010). According to leadership as power relationship view, leaders use their power to exert change in a group (Bass & Bass, 2008; Northouse, 2007; Yukl, 2010). The leadership as transformational process approach, which is also the focus of this paper, provides a perspective that leaders affect their followers to do more than what they normally accomplish (Bass, 1995; Bass & Bass, 2008). The skills perspective of leadership focuses on the knowledge and skills that help an individual become a leader (Northouse, 2007).

Transformational Leadership. Transformational leadership as we understand today emerged in the groundbreaking book of James MacGregor Burns "Leadership"

(Northouse, 2007; Stewart, 2006). According to Burns (1978), leaders engage in two types of leadership behaviors: transformational and transactional leadership. Transactional leadership involves exchanges of things that are valuable between the leader and his/her followers. On the other hand, transformational leadership is the process of inspiring followers to perform better than expected. In the process of transformational leadership, both the leader and his/her followers' motivation and morality levels raise. Transformational leaders care about their followers' needs (Bass, 1998; Bass & Riggio, 2006; Judge & Bono, 2000; Northouse, 2007; Stewart, 2006).

House's (1977) publication of his theory of charismatic leadership coincides with Burns's (1978) publishing of his work on leadership. In the literature, transformational and charismatic leadership are used almost synonymously. The term "charisma" is originally from Greek that means "gifts of grace" that is given to certain people to do things that other people cannot do (Larsson & Ronnmark, 1996; Northouse, 2007). Larsson and Ronnmark (1996) state that the word "charisma" was originally used in the Christian church and it was defined by Weber (1947), who tried to explain the sources of authority. According to Weber (1947), charismatic leaders do not impose their authority with rules, position, or power, but with the faith and trust that his/her followers have in him or her. Northouse (2007) states that House's charismatic leadership theory is based on the concept that charismatic leaders act and behave in such ways that their charisma have effect on their followers. Some of these effects include trust in leaders' ideology, unquestioning acceptance and obedience, heightened goals, and increased confidence (Northouse, 2007).

Bass (1985) established his theory of transformational leadership, which was inspired by Burns' and House's theories of transformational and charismatic leadership theories. The full range of leadership theory categorizes leadership behavior as transformational, transactional, and laissez-faire (Avolio & Bass, 2004; Bass, 1985; Rubin, Munz, & Bommer, 2005). In Bass's model of transformational leadership, transformational, transactional, and laissez-faire leadership are a single continuum. One of the basic differences between Bass's and Burns's transformational leadership models is that in Burns's model, transformational and transactional leadership are two opposite constructs, whereas Bass thinks that they are not independent from each other (Bass, 1985; Judge & Bono, 2000; Northouse, 2007). Piccolo and Colquitt (2006) posit that elevating the levels of thinking of the followers is the central theme in transformational leadership. Transformational leaders help followers develop new ways of thinking that leads to superior performance. Bass (1990) states that transformational leaders have their followers achieve superior performance by instilling them to become aware of the goal of the group and think beyond their self-interests. In order for the transformational leaders to obtain these results, they pay attention to the individual needs of their followers and provide intellectual stimulation.

Components of Transformational Leadership. Transformational leadership theory of Bass (1985, 1998) is a multidimensional theory of leadership that includes components of transformational and transactional leadership and laissez-faire leadership.

Transformational Leadership. Bass's theory of transformational leadership has five dimensions: idealized influence (behavior and attributed), also known as charisma, inspirational motivation, intellectual stimulation, and individualized consideration (Bass, 1998; Bass & Riggio, 2006; Judge & Bono, 2000; Northouse, 2007; Stewart, 2006). Idealized influence (or charisma) is about the leader being a role model for his/her followers. The followers admire and respect their leader and they identify with him/her. The followers trust the leader, which makes it easier for the leader to provide a sense of mission and vision that are accepted by the followers. The current version of the leadership measurement (i.e., MLQ) distinguishes the idealized influence by attributions and behaviors (Bass & Avolio, 2004). The second component of Bass's (1998) model of transformational leadership is inspiration or inspirational motivation, where the leaders engage in behaviors that motivate their followers. The followers are so motivated that they commit to the task, mission, and vision of the group with enthusiasm and as a result they perform better than they would normally. Intellectual stimulation is the third factor that transformational leaders include in their leadership. The leaders encourage their followers to discover new ways doing things, new ideas, and new approaches to problems. In other words, they support creativity. The last component of transformational leadership theory is individualized consideration. Transformational leaders are sensitive to the needs of individual followers. In order to be aware of the needs of the followers, the leaders create an environment that enables interaction between the leaders and their followers (Bass, 1990; Judge & Bono, 2000; Northouse, 2007; Piccolo & Colquitt, 2006; Stewart, 2006).

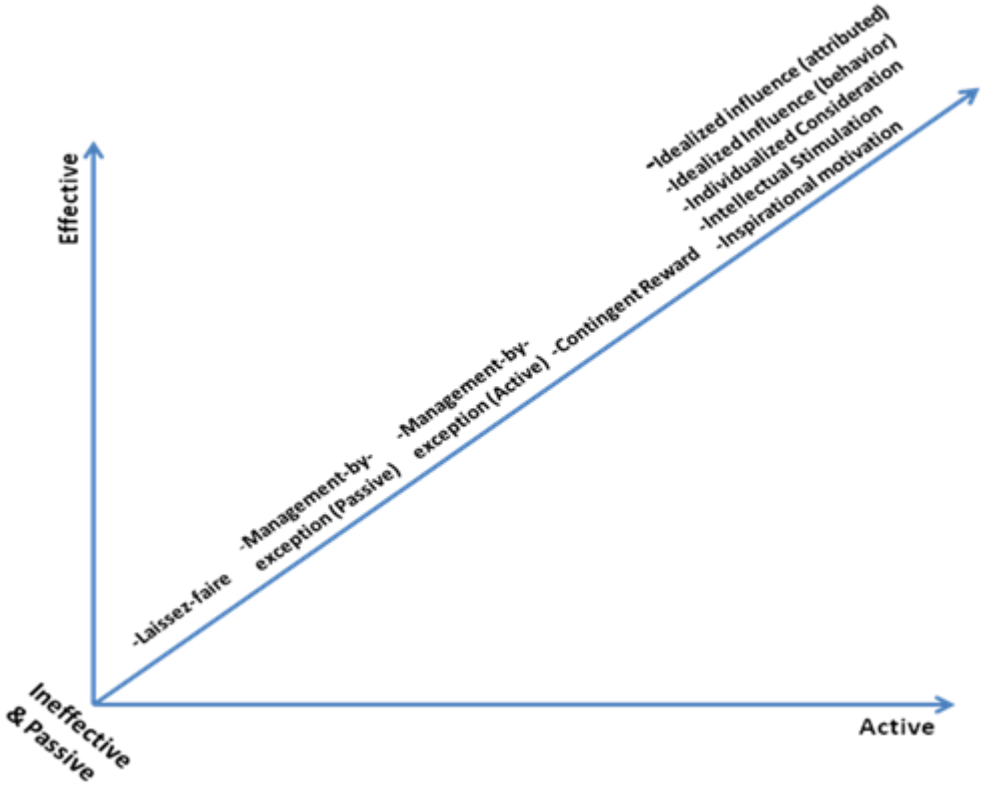
Transactional Leadership. Unlike in Burns's (1978) model, transactional leadership is not separate from transformational leadership in Bass's (1998) model. Leaders could be both transformational and transactional (Bass, 1998; Bass & Riggio, 2006; Judge & Bono, 2000; Northouse, 2007). There are three dimensions in transactional leadership model of Bass: contingent rewards, management-by-exception - active, and management-by-exception –passive (Bass, 1998; Bass & Riggio, 2006). The nonleadership dimension –laissez-faire—will be discussed separately. Contingent reward refers to the exchange process that takes place between the leader and the follower. The leader and the follower agree on a reward provided the follower performs as asked. In other words, extrinsic motivation is used to get things done. The management-by-exception active dimension deals with "corrective criticism, negative feedback, and negative reinforcement" (Northouse, p.185, 2007). The leader actively monitors the performance of the followers and provides negative feedback or corrective actions when the followers do not meet the standards (Bass, 1998; Bass & Riggio, 2006; Judge & Bono, 2000; Northouse, 2007). On the other hand, management-by-exception passive involves the interference of the leader when things really go wrong. Studies on transformational leadership often use the measure called multifactor leadership questionnaire (MLQ). MLQ was developed by Bass and his colleagues. There are one hundred and forty-one statements that fall under the categories of either transformational or transactional leadership (Northouse, 2007).

Laissez-faire Leadership (Non-Leadership). At the opposite end of the transformational leadership continuum is laissez-faire leadership. It is also termed as non-leadership. Laissez-faire leaders do not perform the duties of a leader. They avoid the responsibilities and take their hands off the task of leadership. Unlike the other

dimensions of transformational leadership, laissez-faire leaders do not provide feedback or contingent reward. Their interactions with the followers are at a minimum level. (Northouse, 2007).

The visual representation of the Full Range of Leadership model is in Figure 1. The vertical axis represents the effectiveness of leadership behaviors while the horizontal axis represents the activeness of leadership behaviors. The line that bisects the vertical and horizontal axes represents the full range of transformational leadership. The most effective and active leadership behaviors are the components of transformational leadership (i.e., idealized influence-attributed, idealized influence-behavior, individualized consideration, intellectual stimulation, inspirational motivation). The components of transactional leadership (i.e., contingent rewards, management-by-exception active, and management-by-exception passive) follow components of transformational leadership. Toward the intersection of the vertical and horizontal axes, there is the laissez-faire leadership (i.e., non-leadership). The overall purpose of the figure is to indicate that transformational leadership is more active and effective than transactional leadership, which is more active and effective than laissez-faire leadership (Bass & Bass, 2008).

Figure 1. Bass's Full Range of Transformational Leadership model.



Bandura's Self-Efficacy Theory

Among other factors, the drive for controlling life circumstances is one of the key motivators of human behaviors (Bandura, 1997). Social cognitive theory approaches the foundations of the sources of human behaviors from an agentic angle, which proposes that individuals can shape and direct life experiences and events (Bandura, 1997, 2000).

The human agency has several mechanisms among which is the belief of personal efficacy, which is also the most involving (Bandura, 1997). According to the self-efficacy component of social cognitive theory, beliefs about one's abilities are the core incentives for his/her actions (Bandura, 1997). In other words, self-efficacy is the "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, p.3, 1997). Bandura (2000) posits that efficacy beliefs are the determinants of strategic or capricious, optimist or pessimist thinking, the selection of action in life events, setting goals and achieving them, the amount of efforts to put in his/her endeavors, how long the individual would cope with the difficulties, outcome expectations due to the efforts put forward, and the amount of stress felt in burdensome circumstances.

Beliefs of self-efficacy originate from four major sources: enactive mastery experience, vicarious experience, verbal persuasion, and physiological and affective state (Bandura, 1997, 1977). Individuals use these sources to inform themselves and assess their efficacy levels (Bandura, 1977). Among the four major sources of information for the assessment of efficacy levels, enactive mastery experiences are the most influential one (Bandura, 1977, 1997). Through attempts that produce success, individual gains beliefs in his/her own efficacy, whereas failures weaken the self-efficacy especially if it has not been firmly established yet. Since personal experience of mastery does not suffice for the assessment of self-efficacy level, people observe their social environments for models. Vicarious experience source of self-efficacy refers to the individual's observations of his/her social environment in order to persuade him/herself that if others can do he/she can also accomplish the task at hand. However, vicarious experiences are weaker sources of self-efficacy and more prone to alter. Through verbal cues and suggestions behaviors can be shaped. Social interaction often includes verbal persuasion, which the individual can foster his/her efficacy beliefs from. However, as in vicarious experiences, verbal persuasion is likely to be less effective as compared to personal accomplishments (i.e. enactive mastery experience). In circumstances that tax the individual, physiological and affective states can provide the individual with valuable information concerning his/her efficacy. People assess their level of anxiety and, thus, their capability to cope with the circumstances. Higher levels of fear or anxiety would likely have adverse effects on the individual's performance (Bandura, 1977, 1997).

The relationship between self-efficacy and performance in various settings is highly researched (Lane, Lane, and Kyprianou, 2004). Self-efficacy studies have gained a lot of interest. Especially the relationship between self-efficacy and academic performance has been broadly investigated. Multon, Brown, and Lent's (1991) meta-analytic study examining the relationship between self-efficacy and academic performance finds an overall effect size of $r = .38$, which suggests that about 18% of the variation in academic performance can be explained by the impact of self-efficacy. Similarly, in their meta-analysis of the relationship between self-efficacy and work-related performance, Stajkovic and Luthans (1998) report that there is an average correlation of .38 between self-efficacy and performance. Jackson (2002) also reports that self-efficacy beliefs are strong predictors of academic performance.

Method

Major issues include the type of methodology that would be used in the research, the research instruments to be used, and the appropriate level of analysis if quantitative approach is used (Yukl, 2010). Surveys are one of the most common instruments used in leadership studies (Yukl, 2010). The purpose of such studies is to replicate the previous ones (Yukl, 2010). The level of analysis is usually individual or dyadic and these type of studies are usually short-termed as opposed to longitudinal ones (Yukl, 2010). The causality direction is usually unidirectional and there are one or two variables that are mediated by either a few variables or none (Yukl, 2010). The data sampling method is usually convenient sampling and single source of data is used (Yukl, 2010). Yukl (2010) reports that most common level of leader in leadership studies is at supervisor level, which indicates that the level of leadership in my study is no different. Since the present study is nonexperimental and the research questions seek correlation between transformational leadership behaviors of faculty supervisors and self-efficacy of GAs, several inferential statistics will be used. Specifically, regression, multiple regression, and logistic regression analyses along with descriptive statistics are used. The following is the research questions of this study:

1 What is the relationship between transformational leadership behaviors of faculty supervisors and the graduate teaching assistants' teaching self-efficacies?

2 What is the relationship between the number of years as a TA and TAs' teaching self-efficacies?

3 What is the relationship between teaching self-efficacies of the TAs and their satisfaction as TAs?

4 What is the relationship between transformational leadership behaviors of faculty supervisors and GAs' satisfaction as GAs?

Participants and Procedure

The target population for this study is the faculty who are in the position of supervising TAs and RAs (i.e., GAs) and the GAs of two higher education institutions in the Midwest. Thus, a self-selected convenience sampling method was used. After the Institutional Review Board (IRB) approved to collect data for this study at large Midwest universities, two large Midwest research universities were contacted for their participation in the data collection process. One of the universities is classified as doctorate-granting very high research activity, while the other is classified as doctorate-granting high research university by the Carnegie Foundation for the Advancement of Teaching (Carnegie Foundation for the Advancement of Teaching, 2012). The university classified as doctorate-granting high research university was contacted for mass email message sending request. The university had sent a mass message including the informed consent and cover letter to its graduate students. As for the doctorate-granting very high research activity higher education institution from which the data were collected, the individual department graduate directors were contacted via email asking them to share the informed consent and cover letter with their GAs in their departments. Some departments included the email addresses of their TAs and RAs on their websites. In situations where the graduate directors did not respond for any reason, the individual GAs whose email addresses were displayed on the departmental web

pages were contacted directly via email. Thus, given the nature of the data collection procedure, it is not possible to provide a correct response rate. The GAs who were contacted via mass email message sent by their institution, by their graduate directors, or directly by the researcher of this study were provided an electronic cover letter explaining the purpose of the study. All the survey instruments were delivered to the participants through the Internet. The leadership instrument (MLQ 5x short rater form) was purchased through Mind Garden Inc. Mind Garden Inc. set up the electronic version of MLQ 5x and provided a unique link for each of the participant to fill out the surveys. All the survey instruments (MLQ 5x and TA self-efficacy scales) were delivered to the participants on the Internet. All participants were informed about the purpose of the study and they were also informed that agreeing to take the surveys would be regarded as they had the consent to participate in the study. The participants used a unique URL address that was set up by Mind Garden Inc. to fill out demographic information and the transformational leadership questionnaire and graduate teaching or research self-efficacy instruments.

Leadership Instrument

The most widely used measure of transformational leadership is the Multifactor Leadership Questionnaire (MLQ), which was originally developed by Bass in 1985 (Muenjohn & Armstrong, 2008; Northouse, 2007). The MLQ is considered to be the best validated measure of transformational leadership (Muenjohn & Armstrong, 2008) and it has been used in variety of research settings such as "in military, government, educational, manufacturing, high technology, church, correctional, hospital, and volunteer organizations" (Avolio & Bass, 2004, p.12). There are forty-five items in the MLQ (form 5x), each of which nine distinct leadership factors and three leadership outcomes. Idealized influence (behavior and attribute), Inspirational motivation, Individual consideration, and Intellectual stimulation are the five scales for the characteristics of transformational leadership; Contingent reward, Management-by-exception-active, and Management-by-exception-passive are identified as the three scales for the characteristics of transactional leadership; and one scale was identified as non-leadership (Avolio & Bass, 2004; Muenjohn & Armstrong, 2008). The root of the forty-five descriptive statements listed in the MLQ rater from is *The person I am rating* and the descriptive statements are rated on a 5-point scale ranging from *Not at all* to *Frequently, if not always* (Avolio & Bass, 2004). An example item is "The person I am rating (the root of the statement) *Gets me to do more than I expected to do"* (Avolio & Bass, 2004). Muenjohn and Armstrong (2008) state that their research supports the structural validity of the MLQ. Antonakis, Avolio, and Sivasubramaniam (2003) also find that MLQ is strongly validated measure that distinguishes nine factors of leadership. The preliminary statistics for MLQ 5x include scores from nine samples (N = 2,154), which indicate that the reliabilities for the total items and for each leadership factor scale were generally high, ranging between .74 and .94 (Avolio & Bass, 2004). Therefore, in order to measure the leadership factors of faculty supervising GAs, only the transformational leadership components (ie., idealized influence behavior, idealized influence attributed, inspirational motivation, intellectual stimulation, and individualized consideration) of MLQ 5x, which was consisted of 20 items, was used in this study. Transactional leadership components (i.e., contingent rewards, management-by-exception active and management-by-exception passive) and laissez-faire leadership

were not included. The rationale behind the exclusion of transactional and laissez-faire leadership was to avoid survey fatigue, which is defined as "respondent burden, generally defined as the time and effort involved in participating in a survey" (Porter, Whitcomb, & Weitzer, 2004, p. 64). There is more than twice the number of items to be responded to in the full model of MLQx than the one administered in this study. Porter, Whitcomb, and Weitzer (2004) state that the longer the surveys are the lower the responses get.

Self-Efficacy Measures

According to Bandura (2006), perceived self-efficacy cannot be measured with global scales. Since the global or general self-efficacy scales do not focus on the domain of functioning, they are not capable of predicting or explaining the self-efficacy under investigation. The items in general self-efficacy scales usually do not take the context in which the perceived self-efficacy is measured, into account, which leads to confusion about what is measured or what tasks must be managed. Thus, perceived self-efficacy scales must be created to cater to the demands of the particular situation or domain of functioning. Bandura (2006) states that the "self-efficacy scales must be linked to factors that, in fact, determine quality of functioning in the domain of interest" (p. 311).

Since self-efficacy is about the perception of the individual about his/her capability, the items in a self-efficacy scale should be constructed accordingly (Bandura, 2006). The capability items in a domain of functioning must be phrased in *can do*, which is a statement of judgment of capability, rather than *will do*, which is a phrase of intention (Bandura, 2006).

Graduate Teaching Self-Efficacy Scale. Graduate Teaching Self-efficacy Scale (GTSES) was based on Self Efficacy toward Teaching Inventory (SETI) (Tollerud, 1990), which has been used to measure the self-efficacy of the GTAs in counseling departments. In SETI, there are 35 items that measure the degree of perceived self-efficacy in five specific domains of teaching: course preparation, instructor behavior, materials, evaluation and examination, and clinical skills training. The participants rate their capabilities in specific tasks on a scale (1-4) ranging from "Not confident" to "Completely confident." In this study, SETI is addressed as GTSES.

Prieto and Altmaier (1994) use a modified version of SETI in their study. Since SETI was originally created to assess the perceived self-efficacy of teaching assistants in counselor education, certain items were specific to counseling psychology GTAs (Prieto & Altmaier, 1994). In this study, "Provide supportive feedback for counseling skills," "Provide challenging feedback for counseling skills," and "Model counseling skills" items were excluded to appropriate the scale to broader participants GTAs. Prieto and Altmaier (1994) report that they, too, removed the counseling education specific items in their study. Thus, in this study, the 32-item a modified version of SETI was used to assess the self-efficacy of GTAs.

Another modification that was made to SETI is the response scale. Bandura (2006) warns that scales using few steps are less sensitive as people tend to focus on one or two points in order to avoid extreme positions. He posits that inclusion of intermediate steps can help reduce the risk of respondents' focusing on the same steps (Bandura, 2006). Therefore, "an efficacy scale with the 0-100 response format is a

stronger predictor of performance than one with a 5-interval scale" (Bandura, 2006, p. 312). In this study, the rating scale of SETI was modified to ensure reliability. Instead of a scale of 1-4 format, a 100-point scale was used. The scale ranges in 10-unit intervals from 0 ("Cannot do") to 100 ("Highly certain can do").

Sample

In this study, the primary participants were graduate teaching and research assistants. Two hundred and five GAs participated in the study. The subjects were asked to provide information about whether they were teaching assistant (TA) or research assistant, their gender, ethnicity, number of years as a TA/RA, their satisfaction as a TA/RA, and their academic field.

Graduate Assistants. The total number of participants in this study was 205. There were 126 TAs and 79 RAs who participated in the study. In this paper, however, except for the fourth research question, data pertaining to TAs are included. Only for the fourth question, all participants regardless of whether they are TAs or RAs, ıncluded. The number of female participants was 117 and the number of male participants was 86. The number of female TAs was 71 and the number of male TAs was 54. There were 46 female RAs and 32 male RAs. There were two participants who did not respond to the gender question (Table 1).

Table 1

Gender Distribution of TA/RA Participants

	Gender			
Participant	Female	Male	Total	Percent
TA	71	54	125	60.9%
RA	46	32	78	38%
No Response			2	0.9%
Total	117	86	205	
Percent	57%	42%		

Two hundred and four participants responded to the question addressing the number of years as a TA or RA. There was one missing case. The mean of the number of years as a TA/RA was 3.44 (*SD* = 2.220), while the median was three years. The range was 0-11 years. Two (1%) of the participants were TA/RA for less than a year. Forty-three participants (21%) were TA/RA for a year; forty participants (19.5%) were TA/RA for two years; thirty-seven participants (18%) were TA/RA for three years; twenty participants (9.8%) were TA/RA for four years; twenty-five participants (12.2%) were TA/RA for five years; eighteen participants (8.8%) were TA/RA for six years; nine participants (4.4%) were TA/RA for seven years; four participants (2%) were TA/RA for eight years; two participants (1%) were TA/RA for nine years; three participants (1.5%) were TA/RA for ten years; and one participant (0.5%) was a TA/RA for eleven years. There was one participant who reported to be a TA/RA for 30 years, which was likely a typographical response error. This value was changed to three years.

As for the academic field of the participants, seventy-three participants (36.1%) were in a science field, while 129 participants (63.9%) were in a non-science field. Three (1.5%) of the participants did not report their academic fields (Table 2).

Table 2

Academic field Distribution of TA/RA Participants Clustered as Science and NonScience

Academic Field	Frequency	Percent
Science	73	35%
Non-science	129	62.9%
No response	3	1.5%
Total	205	100%

The participants were asked to respond to the question on their satisfaction with being TA/RA. One-hundred seventy-six (85.9%) participants reported they were satisfied and 29 participants (14.1%) responded negatively to their satisfaction with being TA/RA (Table 3).

Table 3

Job Satisfaction Distribution of TA/RA Participants

Satisfaction	Frequency	Percent
Yes	176	85.9%
No	29	14.1%
Total	205	100%

Faculty Supervisors. The participants of the study reported that 72 of the faculty supervisors were female (35.1%) and 108 (62.4%) of the faculty supervisors were male. There were five (2.4%) faculty supervisors whose gender information was not reported. As for the academic rank of the faculty supervisors, thirty-six (17.6%) were assistant professors, 55 (26.8%) associate professors, 91 (44.4%) full professors, 3 (1.5%) professor emeritus, and 18 (8.8%) adjust or other professors were reported. Two (1%) of the faculty supervisors' academic ranks were not reported. The academic fields of participants were categorized into science and non-science categories (Table 9). Originally, there were more categories of academic field (i.e., biological sciences, 9.3%; engineering and applied sciences, 14.1%; physical sciences, 8.8%; mathematics, 2%; agricultural sciences, 1.5%; business, 2%; education, 16.1%; humanities, 9.3%, arts, 0.5%; social sciences, 33.7%; health, 1.5%). However, to get statistically significant results, the academic fields of participants were categorized under science and non-science categories (biological sciences, engineering and applied sciences, physical sciences, mathematics, and agricultural sciences as being science fields and the rest non-science fields). There were 70 (34.1%) faculty supervisors in a science field, whereas 131 (63.9%) faculty supervisors were in a non-science field. There were four (2%) faculty supervisors whose academic field was not reported.

Results

The following are results pertaining to each of the research questions.

Transformational Leadership Behavior and Self-Efficacy

To answer the first research question, which examined the relationship between transformational leadership behaviors of faculty supervisors and graduate teaching assistants' self-efficacies, multiple regression analysis was used. The constructs of transformational leadership (i.e., idealized influence behavior, idealized influence attribute, inspirational motivation, individualized consideration, and intellectual stimulation) were the predictor (independent) variables. Graduate Teaching Assistant Self-Efficacy was the outcome (dependent) variable used in the study. Table 4 shows the descriptive statistics for the data obtained from MLQX short form (using only the transformational leadership constructs) and graduate teaching assistant (GTA) teaching self-efficacy scale (GTSES). The GTAs (n = 126) answered a total of 20 questions inquiring about their faculty supervisors' transformational leadership behaviors as well as 31 questions regarding their teaching self-efficacies. The regression assumption of homoscedasticity did not appear to be met (Figure 20) and the histogram (Figure 21) of the standardized residuals indicated a negatively skewed distribution. All values of the variance inflation factor (VIF) were less than 10, which indicates that there was not excessive multicollinearity among the independent/predictor variables (Idealized influence behavior, idealized influence attribute, inspirational motivation, individualized consideration, and intellectual stimulation). The Durbin-Watson statistic (2.15) is between 1 and 3, thus the assumption of independent residuals has been met. The results of regression showed that 6% of the variability in graduate teaching self-efficacy was explained by idealized influence behavior, idealized influence attribute, inspirational motivation, individualized consideration, and intellectual stimulation. However, none of the five predictor variables was statistically significant predictors (each $p > .05$, see Table 5).

Table 4

Descriptive Statistics for the GTSES and Faculty Transformational Leadership Behaviors

Descriptive Statistics			
	n	*M*	*SD*
Graduate Teaching Self Efficacy Scale	126	84.19	11.83
Idealized Influence Behavior	126	2.42	1.05
Idealized Influence Attribute	126	2.73	0.95
Inspirational Motivation	126	2.75	0.99
Individualized Consideration	126	2.68	1.01
Intellectual Stimulation	126	2.56	1.01

Table 5

Results for Regression of Transformational Leadership Behaviors on Graduate Teaching Self-Efficacy

Variable	*B*	*SE(B)*	*β*	*t*	*p*	
(Constant)	76.44	3.4		22.49	.000	
Idealized Influence Behavior	1.68	1.87	0.15	0.9	.37	
Idealized Influence Attribute	1.18	2.18	0.95	0.54	.59	
Inspirational Motivation	-0.22	1.88	-0.02	-0.12	.9	
Individualized Consideration	0.77	2.06	0.06	0.37	.71	
Intellectual Stimulation	-0.41	1.85	-0.03	-0.22	.82	

a. Dependent Variable: Graduate Teaching Self-Efficacy
$R^2 = .06$

Experience and Self-Efficacy

The second research question investigated the relationship between the number of years as a graduate teaching assistant and their teaching self-efficacy. Among the 126 TA participants, one participant was a graduate teaching assistant with less than 1 year experience, 24 participants were a graduate teaching assistant for a year, 27 participants were a graduate teaching assistant for 2 years, 21 participants were a graduate teaching assistant for 3 years, 12 participants were a graduate teaching assistant for 4 years, 21 participants were a graduate teaching assistant for 5 years, 10 participants were a graduate teaching assistant for 6 years, 5 participants were a graduate teaching assistant for 7 years, 2 participants were a graduate teaching assistant for 8 years, 2 participants were a graduate teaching assistant for 9 years, and 1 participant was a graduate teaching assistant for 10 years. The regression assumption of homoscedasticity did not appear to be met. Various attempted transformations of the variable (log, square root, inverse) did not rectify the problem. The tolerance was not below 0.1, which indicated that there were no excessively high correlations among predictor variables. The Durbin-Watson statistic (2.20) was between 1 and 3, thus the assumption of independent residuals was met. The result of the regression showed that a total of 5.5% of the variability in graduate teaching self-efficacy was explained by number of years as a graduate teaching assistant and number of years as a graduate teaching assistant was statistically significant predictor of teaching self-efficacy ($p < .05$, see Table 6).

Table 6

Results for Regression of Number of Years as a Graduate Teaching Assistant on raduate Teaching Self-Efficacy

Variable	*B*	*SE(B)*	β	*t*	*p*	
(Constant)	79.61	1.98		4.08	.000	
Years Assistant	1.33	0.49	0.23	2.69	.008	

a. Dependent Variable: Graduate Teaching Self-Efficacy
$R^2 = .05$

Self-Efficacy and Job Satisfaction

Question 3 investigated the relationship between teaching self-efficacy of the TA participants and their satisfaction as a TA. Among the 126 TA participants, 114 TAs responded "yes" to the satisfaction question, whereas 12 responded "no." The result of a logistic regression showed that graduate teaching self-efficacy did not significantly predict TA satisfaction, p = .524 (Table 7). However, the Hosmer and Lemeshow test indicated that the model with the predictor (graduate teaching self-efficacy) fits the data well. However, this was not consistent with the conclusion of the omnibus model test, p = .524 (Table 7). Thus, teaching self-efficacies of the TAs significantly predicted their satisfaction as a TA.

Table 7

Results for Logistic Regression of Graduate Teaching Self-Efficacy on Satisfaction

			95% CI for Odds Ratio		
	B	*SE*	Lower	Odds Ratio	Upper
Constant	0.96	1.98			
Teaching Self-Efficacy	0.01	0.02	.97	1.016	1.064

Note: (Hosmer & Lemeshow) $x^2 = 3.762$, $p = .807$
Model $x^2(1) = 0.406$, $p = .524$

Transformational Leadership Behaviors and Job Satisfaction

Question 12 investigated the relationship between transformational leadership behaviors of faculty supervisors and participants' satisfaction as a TA or an RA. Among the 205 participants, 176 participants responded "yes" to the satisfaction question, whereas 29 participants responded "no." The results of a logistic regression showed that transformational leadership behaviors of faculty supervisors significantly predicted TA and RA satisfaction, $p < .05$ (Table 8).

Table 8

Results for Logistic Regression of Transformational Leadership Behaviors of Faculty ıpervisors on Graduate Assistants' Satisfaction

			95% CI for Odds Ratio		
	B	*SE*	Lower	Odds Ratio	Upper
Constant	-1.648	.586			
Transformational Leadership	1.523	.272	2.69	4.58	7.82

Note: (Hosmer & Lemeshow) $x^2 = 3.96$, $p = .784$
Model $x^2(1) = 41.03$, $p < .05$

Discussion and Conclusion

The first research question investigated the relationship between transformational leadership behaviors and graduate teaching assistants' teaching self-efficacies. Contrary to the prior research that reports a positive relationship between transformational leadership and follower self-efficacy (Kirkpatrick & Locke, 1996; Shamir, House, & Arthur, 1993; Walumbwa, Avolio, & Zhu, 2008), none of the transformational leadership behaviors (i.e., idealized influence behavior, idealized

influence attribute, inspirational motivation, individualized consideration, and intellectual stimulation) of faculty supervisors were statistically significant predictors of graduate assistant teaching self-efficacies.

The first part of the fifth research question investigated the relationship between the number of years as a TA and teaching self-efficacy. The result indicates that number of years as a TA is a significant predictor of teaching self-efficacy. In other words, the longer the participants were TAs, the higher their teaching self-efficacies were. This is not a surprising finding at all. According to Bandura's self-efficacy theory, the more an individual performs a task the more confident he or she will become. The number of years as a TA would give the individual TA opportunities to gain expertise and thus have higher self-efficacy. The longer the TAs serve, the more training they would receive. The literature on prior training and experience and TA effectiveness is ambiguous. While some studies indicate that prior training and previous teaching experience are positively correlated to teaching self-efficacy (Prieto & Altmaier, 1994) and suggest that prior teaching experience should be included in the graduate teaching assistant selection criteria (Park, 2004), others report that prior experience is not positively correlated to teaching effectiveness while training is (Shannon, Twale, & Moore, 1998). Golde and Dore (2001) state that TAs gain competence in teaching over time, which is congruent with the results of this study.

The first part of the eleventh research question investigated the relationship between teaching self-efficacy of the TAs and their satisfaction as TAs. Similarly, the second part of the eleventh research question investigated the relationship between research self-efficacy of the RAs and their satisfaction as RAs. The results indicate a positive relationship between the teaching self-efficacies of the participants and their satisfaction. Both teaching and research self-efficacies predict the satisfaction of the TAs and RAs. Satisfaction, particularly job satisfaction is defined as "pleasurable or positive emotional state resulting from an appraisal of one's job or job experiences" (Locke, 1976, p. 1300). Other researchers have defined satisfaction as affect and attitude toward one's job, which indicates that there is not consistency in the literature regarding the definition of the construct of satisfaction (Weiss, 2002). Weiss (2002) further suggests that we have to separate the constructs constituting the construct of satisfaction. According to him, "overall evaluative judgments about jobs, affective experiences at work, and beliefs about jobs" constitute the key components of job satisfaction (Weiss, 2002). Based on the definition and the key components of job satisfaction, the results of this study should be regarded cautiously as a global measure of satisfaction is used. The results of this study concur with prior research (Judge & Bono, 2001; Judge, Locke, Durham, & Kluger, 1998). In their meta-analytic study, Judge and Bono (2001) state that self-efficacy is positively related to job satisfaction. When the GAs have higher self-efficacies, they would feel competent regarding their jobs, which would explain the positive relationship between self-efficacy and satisfaction of the GAs.

The final research question investigated the relationship between transformational leadership behaviors of faculty supervisors and the participant TAs and RAs satisfaction. The result indicates that transformational leadership behaviors of faculty supervisors are significant predictors of satisfaction. The finding is in congruent

with the literature, which reports that transformational leadership behaviors of leaders and followers' satisfaction are positively correlated (Avolio & Bass, 2004).

Even though the analyses of the data and findings did not yield significant results concerning the relationship between transformational leadership behaviors of faculty supervisors and GTAs' and GRAs' teaching and research self-efficacies, there are abundant contrary findings in the literature (Walumba, Avolio, & Zhu, 2008; Wang, Oh, Courtright, & Colert, 2011). Thus, more research needs to be conducted in academic settings to investigate the transformational leadership behaviors of faculty supervisors and graduate assistants' self-efficacies. Walumba, Avolio, and Zhu (2008) report that there is significant relationship between transformational leadership and self-efficacy and they suggest that people in leadership positions should engage in transformational leadership behaviors to increased level of follower self-efficacy.

Experience, which was measured with number of years, as a graduate teaching or research assistant significantly predicted graduate teaching and research assistants' teaching and research self-efficacies. As Bandura's (1997) self-efficacy theory suggests, individuals gain information from the sources enactive mastery experiences, vicarious experiences and verbal persuasion all of which builds up through time. Thus, the longer the GAs or RAs are in their positions, the higher their self-efficacies would become. The findings suggest that the novice GAs would have lower self-efficacy, which should be considered by the supervisors and the departments that they are operating within. The supervisors should provide the necessary support and guidance especially to the novice GAs in the start of their academic careers as TAs or RAs.

The results of the questions investigating the relationship between self-efficacy and satisfaction indicated that there is a positive correlation between both teaching and research self-efficacy of GAs and RAs and their satisfaction. Job satisfaction is one of the most widely discussed and studied concepts in industrial and organizational psychology. It plays a central role in the study of behavior at work. Although it is not within the scope of this study, job satisfaction is usually paired with job performance. Nevertheless, to establish such a correlation, a longitudinal study is needed. The faculty supervising Gas should consider the effect of self-efficacies of their supervisees and continue engaging in activities that would help increase the graduate assistants' self-efficacies.

The final finding of this study was that transformational leadership behaviors of faculty supervisors are positively correlated with teaching and research self-efficacies of TAs and RAs. To better supervise the TAs and RAs, faculty supervisors should follow the transformational leadership behaviors that are outlined by Bass (1985) and Avolio and Bass, (2004). Supervising faculty should try to instill pride in graduate assistants (GAs) for being in such a position. Faculty supervisors should also prioritize the needs (academic and psychosocial) of GAs as well as try to earn the respect of GAs through the professional authority and confidence in their academic field. Faculty supervisors should highlight the most important values and beliefs and help GAs act purposefully. They should remind GAs to consider the moral and ethical consequences of the decisions and actions taken throughout their tasks. The importance of collaboration and collective purpose should also be emphasized by the faculty supervisors. The faculty supervisors motivate their GAs by making the task of the GAs meaningful. To achieve this goal, the faculty supervisors should be optimistic about the future and let the GAs

notice the optimism. The enthusiasm of the faculty is another factor that would help GAs become motivated about their jobs. The confidence of the faculty supervisors that the task would be accomplished as well as the outcome of the jobs that the GAs are doing should be reminded throughout conversations, which would keep the GAs motivated. Faculty supervisors should lead their supervisees to be innovative and creative. This goal can be achieved if the faculty supervisors would lead and help the GAs re-examine critical assumptions and question them, try to look at the problems from different perspectives, collaborate with others, who could provide different views to solve the problems, and suggesting alternative approaches to solve the problems. Faculty supervisors are not only experts in their academic fields, but also mentors and coaches who pay attention to the individual need of the GAs for achievement and growth. This goal can be achieved through spending time with individual GAs to recognize the developmental needs of them and coach them accordingly. This would also lead to treating the GAs individually rather than seeing them as part of a group. The faculty supervisors should be cognizant that every GA could have different needs, abilities and aspirations that are unique to him/her. This awareness would provide faculty supervisors the opportunity to help GAs develop their strengths and become better in their academic tasks.

The present study primarily investigated the relationship between transformational leadership behaviors of faculty supervisors and TAs' and RAs' teaching and research self-efficacies. In addition, this study investigated the relationship between various demographics (gender, ethnicity, academic field, number of years as a GA) of GAs and faculty supervisors (gender, ethnicity, academic field, seniority, and academic rank of faculty supervisors) and GAs' teaching or research self-efficacy, as well as the relationship between self-efficacies of GAS and their satisfaction, transformational leadership behaviors of faculty supervisors and GAs' satisfaction. The current study did not find significant relationship between transformational leadership behaviors of faculty supervisors and teaching and research self-efficacies of GAs, gender and academic field of RAs and RAs' research self-efficacy. The investigation of the relationships between the participants' (and their faculty supervisors') demographics resulted in mixed findings. There were positive relationships between number of years as GAs and GAs' teaching and research self-efficacies; gender and academic field of faculty supervisors and RAs' research self-efficacy; teaching and research self-efficacies of GAs and GA satisfaction, as well as transformational leadership behaviors of faculty supervisors and GA satisfaction. Some of these findings concur with prior research, while others disagree with the existing literature. It is clear that more research is needed to support and explain the findings in this study.

References

Antonakis, J., Avolio, B. J., & Sivasubramaniam, N. (2003). Context and leadership: an examination of the nine-factor full-range leadership theory using the multifactor leadership questionnaire. *Leadership Quarterly*, *14*(3), 261-295.

Austin, A. E. (2002). Preparing the next generation of faculty: graduate school as socialization to academic career. *The Journal of Higher Education*, *73*(1), 94-122.

Avolio, B.J. & Bass, B.M. (2004). *Multifactor leadership questionnaire (3rd ed.): Manual and sampler set*. Menlo Park, CA: Mind Garden.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, *84*(2), 191-215.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.

Bandura, A. (2000). Exercise of human agency through collective efficacy. *Current Directions in Psychological Science*, *9*(3), 75-78.

Bandura, A. (2006). Guide for constructing self-efficacy scales. In F. Pajares & T. Urdan (Eds.), *Self-efficacy beliefs of adolescents* (pp. 307-337). Greenwich, CT: Information Age.

Bass, B.M. (1985). *Leadership and performance beyond expectations*. New York: Free Press.

Bass, B.M. (1990). From transactional to transformational leadership: Learning to share the vision. *Organizational Dynamics, 19*(3), 19-32.

Bass, B.M. (1998). *Transformational leadership: Industrial, military, and educational impact*. Mahwah, NJ: Lawrence Erlbaum.

Bass, B.M. & Bass, R. (2008). *The handbook of leadership: theory, research & managerial applications.* New York, NY: Free Press.

Bass, B.M. & Riggio, R.E. (2006). *Transformational leadership*. Mahwah, NJ: Lawrence Earlbaum.

Bryman, A. (1992). *Charisma and leadership in organizations*. London. Sage.

Burns, J.M. (1978). *Leadership*. New York: Harper & Row.

Carnegie Foundation for the Advancement of Teaching. (2012). C*arnegie Classification of Institutions of Higher Education.* http://classifications.carnegiefoundation.org/

Council of Graduate Schools (2007). Graduate education: The backbone of American competitiveness and innovation. http://www.cgsnet.org/portals/0/pdf/GR_GradEdAmComp_0407.pdf

Day, D.V., & Zaccaro, S.J. (2007). Leadership: A critical historical analysis of the influence of leader traits. In L.L. Koppes (Ed.), *Historical perspectives in industrial and organizational psychology.* Mahwah, NJ: Lawrence Erlbaum.

Den Hartog, D. N., & Koopman, P. L. (2001). Leadership in organizations. In N. Anderson, D. S. Ones, H. K. Sinangil & C. Viswesvaran (Eds.), *Handbook of industrial, work and organizational psychology, Volume 2: Organizational psychology* (pp. 166–187). Thousand Oaks, CA: Sage.

Golde, C. M., & Dore, T. (2001). *At cross purposes: What the experiences of today's doctoral students reveal about doctoral education*. Philadelphia: Pew Charitable Trusts.

House, R.J. (1977). A 1976 theory of charismatic leadership. In J.G. Hunt and L.L. Larson (Eds.), *Leadership: The cutting edge* (pp-189-207). Carbondale: Southern Illinois University Press.

Jackson, J.W. (2002). Enhancing self-efficacy and learning performance. *The Journal of Experimental Education, 70(3), 243-254.*

Judge, T. A. & Bono, J. E. (2000). Five-factor model of personality and transformational leadership. *Journal of Applied Psychology, 85*(5), *751-765.*

Judge, T. A. & Bono, J. E. (2001). Relationship of core self-evaluations traits –self-esteem, generalized self-efficacy, locus of control, and emotional stability- with job satisfaction and job performance: A meta-analysis. *Journal of Applied Psychology, 86*(1), *80-92.*

Judge, T.A., Locke, E.A., Durham, C.C., & Kluger, A.N. (1998). Dispositional effects on job and life satisfaction: The role of core evaluations. *Journal of Applied Psychology, 83*(1), *17-34.*

Kirkpatrick, S.A. & Locke, E.A. (1996). Direct and indirect effects of three core charismatic leadership components on performance and attitudes. *Journal of Applied Psychology, 81*(1), *36-51.*

Lane, J., Lane, A.M. & Kyprianou, A. (2004). Self-efficacy, self-esteem, and their impact on academic performance. *Social Behavior and Personality, 32*(3), *247-256.*

Larsson, S. & Ronnmark, L. (1996). The concept of charismatic leadership: Its application to an analysis of social movements and a voluntary organization in Sweden. *International Journal of Public Sector Management, 9*(7), *32 – 44.*

Lawrence, F.L. (2006). *Leadership in higher education: Views from the presidency*. New Brunswick, NJ: Transaction Publishers.

Locke, E.A. (1976). The nature and causes of job satisfaction. In M.D. Dunnette (Ed.), *Handbook of industrial and organizational psychology* (pp. 1297-1349). Chicago: Rand McNally.

Luft, J.A., Kurdziel, J.P., Roehrig, G.H., & Turner, J. (2004). Growing a garden without water: Graduate teaching assistants in introductory science laboratories a doctoral/research university. *Journal of Research in Science Teaching, 41*(3), *211-233.*

Muenjohn, N. & Armstrong, A. (2008). Evaluating the structural validity of the multifactor leadership questionnaire (mlq), capturing the leadership factors of transformational-transactional leadership. *Contemporary Management Research, 4*(1), 3-14.

Multon, K.D., Brown, S.D., & Lent, R.W. (1991). Relation of self-efficacy beliefs to academic outcomes: A meta-analytic investigation. *Journal of Counseling Psychology, 38,* 30-38.

National Center for Education Statistics (2016). The condition of education 2016. https://nces.ed.gov/pubs2016/2016144.pdf.

Northouse, P.G. (2007). *Leadership: theory and practice* (4th ed.). Thousand Oaks, CA: Sage.

Park, C. (2004). The graduate teaching assistant (gta): Lessons from north american experience. *Teaching in Higher Education, 9*(3), 349-361.

Piccolo, R. F., & Colquitt, J. A. (2006). Transformational leadership and job behaviors: The mediating role of core job characteristics. *Academy of Management Journal, 49*(2), 327-340.

Porter, S.R., Whitcomb, M.E., & Weitzer, W.H. (2004). Multiple surveys of students and survey fatigue. In S.R. Porter (Ed.) *Overcoming Survey Research Problems: New Directions for Institutional Research (pp. 63-73)* Francisco: Jossey-Bass.

Prieto, L.R. & Altmaier, E.M. (1994). The relationship of prior training and previous teaching experience to self-efficacy among graduate teaching assistants. *Research in Higher Education, 35,* 481-497.

Rubin, R. S., Munz, D. C., & Bommer, W. H. (2005). Leading from within: The effects of emotion recognition and personality on transformational leadership behavior. *Academy of Management Journal, 48*(5), 845-858.

Scott, J.C. (2006). The mission of the university: Medieval to postmodern transformation. *The Journal of Higher Education*, *77*(1), 1-39.

Shackleton, V., & Wale, P. (2000). Leadership and management. In N. Chmiel (Ed.), *Introduction to work and organizational psychology: A European perspective*. Malden, MA: Blackwell Publishers.

Shamir , B., House, R.J., & Arthur, M.B. (1993). The motivational effects of charismatic leadership: A self-concept based theory. Organization Science, *4*(4), 577-594.

Shannon, D.M, Twale, D.J., & Moore, M.S. (1998). TA teaching effectiveness: The impact of training and teaching experience. *The Journal of Higher Education, 69*(4), 440-466.

Stajkovic, A.D. & Luthans, F. (1998). Self-efficacy and work-related performance: A meta-analysis. *Psychological Bulletin, 124*(2), 240-261.

Stewart, J. (2006). Transformational leadership: An evolving concept examined through the works of Burns, Bass, Avolio, and Leithwood. http://www.umanitoba.ca/publications/cjeap/articles/stewart.html

Stogdill, R.M. (1974). *Handbook of leadership: A survey of the literature*. New York: Free Press.

Tollerud, T. R. (1990). *The perceived self-efficacy of teaching skills of advanced doctoral students and graduates from counselor education programs* (Ph.D. dissertation). The University of Iowa, United States, Iowa. Retrieved December 21, 2010, from Dissertations & Theses: A&I. (Publication No. AAT 9112495).

U.S. Department of Education (2006). *A test of leadership: Charting the future of U.S. higher education*. http://www2.ed.gov/about/bdscomm/list/hiedfuture/reports/final-report.pdf

Walumbwa, F.O., Avolio, B.J., & Zhu, W. (2008). How transformational leadership weaves its influence: The role of identification and efficacy beliefs. *Personnel Psychology, 61,* 793-825.

Wang, G., Oh, I., Courtright, S.H., & Colbert, A.E. (2011). Transformational leadership performance across criteria and levels: A meta-analytic review of 25 years of research. *Group & Organization Management, 36*(2), 223-270.

Weber, M. (1947). *The theory of social and economic organizations*. Translated by T.Parsons. New York: Free Press.

Weiss, H. M. (2002). Deconstructing job satisfaction: Separating evaluations, beliefs, and affective experiences. *Human Resource Management Review, 12*, 173-194.

Wert, E. (1998). Foreword. In M. Marincovich, J. Prostko & F. Stout (Eds.), *The professional development of graduate teaching assistants* (pp.xvii-xxi). Bolton, MA: Anker Publishing Company.

Yukl, G. (2010). *Leadership in organizations* (7th ed.). Upper Saddle River, New Jersey: Prentice Hall.