Efficacy Beliefs of College Instructors

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Abstract

Two types of efficacy beliefs have been identified as integral to the practice of education; these are teacher efficacy and collective efficacy. The purpose of this study was to provide an exploratory investigation of teacher and collective efficacy at the college level. We specifically investigated the relationship of teacher and collective efficacy to a series of variables which included experience, professional level, age, gender, academic domain (for teacher efficacy only) and academic department (for collective efficacy only). We also investigated the relationship between collective and teacher efficacy among this population. The sample consisted of 117 graduate students, lecturers, and faculty from a Research I university in the mid-Atlantic region. Statistical analyses revealed no significant differences in teacher efficacy with regard to prior experience, professional level, or age. Differences in teacher efficacy were found with respect to gender and academic domain. Differences in collective efficacy were not found across departments, experience, or professional levels. However, teacher efficacy was significantly correlated with collective efficacy. These findings demonstrate the unique nature of teaching at the college level and suggest directions for implications and future research.

Introduction

Efficacy beliefs refer to judgments regarding the ability to perform actions required to achieve desired outcomes (Bandura, 1977, 1986, 1997). Two types of efficacy beliefs have been identified as integral to the practice of education; these are teacher efficacy and collective efficacy. Teacher efficacy refers to “the teacher’s belief in his or her capability to organize and execute courses of action required to successfully accomplish a specific teaching task in a particular context” (Tschanzen-Moran, Woolfolk Hoy, & Hoy, 1998, p. 233). Collective efficacy refers to a group’s combined or joint belief in their ability as a collective to achieve desired outcomes (Bandura, 1997). While teacher efficacy has long been identified as a crucial construct in the research on teachers and teaching, collective efficacy has just recently begun to receive attention with regard to its role in educational settings (see Goddard, 2001 for a review). Additionally, very few studies have investigated the impact of teacher efficacy in the population of college level instructors (e.g., Heppner, 1992; Preito & Meyers, 1999; Young & Kline, 1996) and only one that we have found has addressed the role of collective efficacy with this population (Loup, Clarke, & Ellett, 1997).

In a time when more and more students are coming to the university and concerns such as grade inflation, plagiarism, and academic dishonesty are becoming more salient, it seems pertinent that we begin to look at the professionals who guide the learning process at this level. That is, we need to specifically focus on the structure and make up of college instructors’ beliefs about their teaching abilities. One expects that the role of teachers at the college level is distinct from the role of those who work with younger students in a mandatory school setting. Still, we can learn from the research conducted with the traditional teaching population and find linkages to how this work may serve to improve education at the college level. However, in order to make these leaps we must first gain an understanding of individual and collective beliefs of college level instructors. Once this information is gleaned we can then begin to determine how the construct of efficacy can be used to understand and potentially improve the teaching processes of these teachers.

To better understand the potential role of efficacy beliefs at the college level it is important to review what we currently know about teacher and collective efficacy. Therefore, the sections that follow provide a brief overview of each construct. Following these overviews a review of the studies that have investigated efficacy beliefs among college level instructors will be given. Finally, the specific aspects and finding s of the current study are explained.
Teacher Efficacy

Determining a definition and conceptual meaning of the teacher efficacy construct continues to bring about much discussion in the literature (see Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998 for a complete review). The primary opponents in this discussion are those (e.g., Guskey and Passaro, 1994) who interpret teacher efficacy from a locus of control foundation as proposed by Rotter (1966) in contrast to those (e.g., Tschannen-Moran et. al., 1998) who favor an understanding of this construct based on the work of Bandura’s (1977) social cognitive theory. The current work follows the latter trajectory and is grounded in Bandura’s (1977) social cognitive theory of self-efficacy, which has come to play a dominant role in the teacher efficacy literature.

Bandura (1993) presents the construct of self-efficacy as the beliefs one has about his or her ability to perform the actions required to achieve specific outcomes. This construct is expected to serve as the key mediator between knowledge and action. Based on the works of Bandura, Pajares (1992) concluded that "beliefs are the best indicators of the decisions individuals make throughout their lives" (p. 307). Thus, it follows that teachers’ beliefs about their personal teaching abilities are a key indicator of teacher behavior, decisions, and classroom organization. Therefore, in the teaching context, teacher efficacy is expected to affect the goals teachers identify for the learning context as well as to guide the amounts of effort and persistence given to the task. Pajares (1992) also remarked that while much research has been done on how teachers think, this has been fruitless in determining expectations of teachers’ actions. In contrast, knowledge of teacher beliefs (e.g., teacher efficacy) has had powerful predictive powers with respect to teacher performance and student achievement outcomes (Pajares, 1992).

For instance, teacher efficacy plays a role in the goals teachers set for themselves and their students, how motivated teachers are to create a positive learning environment, how much effort they expend in teaching students, and how teachers react when faced with difficult situations (Bandura, 1993). Teacher efficacy has been found to be related to such variables as student achievement (e.g., Anderson, Greene, & Loewen, 1988), student motivation (e.g., Midgley, Feldlaufer, & Eccles, 1989), teachers’ willingness to adapt innovations (e.g., Smylie, 1988), teacher effectiveness (e.g., Gibson & Dembo, 1984; Woolfolk & Hoy, 1990), and teacher stress (e.g., Parkay, Greenwood, Olejnik, & Proller, 1988) to name a few. Furthermore, certain dimensions of teacher efficacy have been correlated with teachers’ willingness to experiment in the classroom (McLaughlin & March, 1978), the likelihood of teachers referring low socio-economic status students and/or students with behavior problems to special services (e.g., Meijer & Foster, 1988; Podell & Soodak, 1993; Soodak & Podell, 1993), and student interest in school (Tschannen-Moran et. al, 1998).

Researchers have also investigated the differences in teacher efficacy beliefs across experience or expertise levels. Much work has investigated the differences between pre-service and inservice teachers’ levels of efficacy. Some work has confirmed the claim that teacher efficacy is highest among pre-service teachers and that this level of efficacy drops, often drastically, during the first year of teaching (Brousseau, Book, & Byers, 1988; Soodak & Podell, 1997). The work of Brousseau and colleagues (1988) suggests that this high level of efficacy continues to drop as experience is gained, a result that is also found in the work of Anderson, Greene, and Loewen (1988). In contrast, Soodak and Podell (1997) found that after the drop during the first year of teaching, there is a consistent increase in efficacy beliefs with experience. However, these beliefs never again reach the high, perhaps inflated, levels found in pre-service teachers. Moreover, Soodak and Podell (1997) also found that these extreme highs and lows did not exist for the secondary teachers in their sample. In fact, these researchers report that the secondary teachers were significantly more homogenous in their efficacy beliefs and were less efficacious overall as compared to elementary teachers (Soodak and Podell, 1997).

Other researchers have found that the relationship between efficacy and experience is more positive. For example, Gorrell and Dhamadasa (1994) found that pre-service and inservice Sri Lankan teachers have distinctly different levels of efficacy for particular tasks. Pre-service teachers were found to have higher levels of efficacy for the use of new techniques and implementing new methods of instruction. Inservice teachers, however, were found to have higher efficacy for classroom management, organization of instruction, and having a positive impact on students (Gorrell & Dhamadasa, 1994). Cambell (1996) found higher efficacy among teachers who were experienced, older, and who had higher education than pre-service teachers.

Collective Efficacy

Bandura (1997) defines collective efficacy as “a group's shared belief in its conjoint capabilities to organize and execute the courses of action required to produce given levels of attainments” (p. 477). Similar to an individual’s sense of personal efficacy, the collective efficacy beliefs of groups can affect their goal setting, motivation, effort, and persistence with challenging tasks or situations. Within the context of this study, one can consider an academic department to consist of instructors who work together, to some degree, in a collective environment to enhance academic capabilities of students. Instructors’ sense of collective efficacy, therefore, may influence a department’s ability to overcome challenging situations, set appropriate goals for students, and work towards creating a positive environment in which students can reach their academic potential.

Goddard, Hoy, and Woolfolk Hoy (2000) defined collective teacher efficacy as “a construct measuring teachers’ beliefs about the collective (not individual) capability of a faculty to influence student achievement; it refers to the perceptions of teachers that the efforts of the faculty of a school will have a positive effect on student achievement” (p. 486). Using this definition as a framework, Goddard and his colleagues (2000), conceive of the development of collective teacher efficacy as being made up of two key processes: analysis of the teaching task and assessment of teaching competence. Perceptions of collective capabilities within a school are derived when teachers consider one component in relation to the other. When teachers analyze teaching tasks, they are assessing what is required to engage in successful teaching in their school, what obstacles they may face in carrying out their teaching responsibilities, and what resources are available to aid them in their teaching. Assessment of teaching competence involves teachers' beliefs about the abilities of their colleagues and themselves in light of a
teaching task analysis within their particular school. This assessment may include judgments about colleagues’ teaching skills, training, and expertise. Additionally, when making a judgment related to collective efficacy, instructors may consider what it takes to be a successful teacher, what obstacles teachers in the school face, and what resources teachers have to work with.

Recently researchers have begun to empirically explore the concept of collective efficacy within schools, specifically among teachers (Bandura, 1993; Goddard, 2000; Goddard & Goddard, 2001; Goddard, Hoy, & Woolfolk Hoy, 2000). This research has consistently shown collective efficacy to be related to student achievement differences among schools in reading and mathematics (Bandura, 1993; Goddard, 2000; Goddard et al., 2000) as well as to varying levels of teachers’ individual sense of efficacy (Goddard & Goddard, 2001). Furthermore, Bandura (1993) found that characteristics of the student population (i.e., socioeconomic status, student turnover rates, and student absenteeism) were related to teachers’ sense of collective efficacy. Specifically, student populations that reflected socioeconomic disadvantage, high turnover, and high absenteeism were associated with lower levels of collective teacher efficacy. Goddard and Goddard (2001) found that teachers’ personal sense of efficacy was higher in schools that were more collectively efficacious. The overall findings of each of these studies show the importance of this construct not only for explaining school-level effects on achievement, but to also explain effects on teachers’ individual self-efficacy.

**Review of Work Investigating Efficacy at the College Level**

Studies investigating the teaching and collective efficacy of college level instructors have been scarce in the efficacy literature. The limited studies that investigate college level teaching can be organized into three categories. First, there are those that address the improvement of teaching, particularly with graduate student teachers (Heppner, 1992; Preito & Meyers, 1999; Young & Kline, 1996). Next, are a series of studies that investigate the factors that impact efficacy, with particular focus on gender differences (Brennan, Robison, & Shaughnessy, 1996; Landino & Owens, 1988; Schoen & Winocur, 1988). Lastly, one study was found that compared the teaching and collective efficacy of K-12 teachers, college professors, and social workers (Loup et al., 1997).

**Improving Teaching**

Researchers have investigated the role of self-efficacy in improving university level teaching. One focus in this research has been on the training of Graduate Teaching Assistants (GTAs) and the impact formal training has on the development of their self-efficacy for teaching (Heppner, 1992; Preito & Meyers, 1999). Additionally, some work has been done which investigates the role of teaching self-efficacy in university teachers’ motivation to improve their teaching (Young & Kline, 1996). Specifically, Young and Kline (1996) examined the effects of self-efficacy and outcome expectancy on college instructors’ motivation to improve teaching, as measured by a willingness to attend an on-campus-teaching workshop. Results revealed that outcome expectancy and self-efficacy beliefs were related to motivation to attend the seminars.

Collectively, these works serve to demonstrate the ability to influence teacher efficacy and the role efficacy can play in motivating instructors to improve the quality of college level teaching. The work of Preito and Meyers (1999) and Heppner (1992) demonstrates that variation in levels of teaching efficacy exist among graduate teaching assistants and that formal training can positively influence these levels of efficacy. Young and Kline (1996) have confirmed that self-efficacy for teaching can and does serve as a motivational influence on college level instructors’ intentions and decisions regarding the continued improvement of their teaching practice. Thus, the work of these studies both illustrates the importance of teacher efficacy among college level instructors and verifies the potential of interventions to increase teacher efficacy in this population.

**Factors Contributing to Efficacy**

Studies investigating the role of self-efficacy in university faculty have attempted to provide descriptions of efficacy by gender (Brennan, et al., 1996; Landino & Owen, 1988; Schoen & Winocur, 1988), professional rank (Schoen & Winocur, 1988), age, experience, and gender make-up of academic departments (Landino & Owen, 1988). Moreover, studies investigating efficacy of this population have focused on academic efficacy, which is considered to be the individual’s belief in his or her abilities to carry out the tasks required for an academic position, namely research, teaching, and service (Landino & Owen, 1988; Schoen & Winocur, 1988). Additionally, the common focus in this work is the impact of gender on efficacy and differences in efficacy based on the gender of the professional.

Conclusions that can be drawn across these works are limited. There seems to be some evidence that efficacy beliefs are related to gender, however, socialization processes, role expectations, and the age of the individual when entering the field may all have played a role for which gender served as a proxy variable. Teaching in the realm of higher education seems to be a role that is distinct from other aspects of an academic’s life. The work of Schoen and Winocur (1988) demonstrates that professional rank, gender, and experience are all related to individuals’ levels of academic self-efficacy, in which teaching is one component.

Similarly, Landino and Owen (1988) demonstrate that while research and service components of academic efficacy could be explained though variables such as age, departmental gender profile, degree earned, and university responsiveness; self-efficacy for teaching could not be explained by any of the twelve variables these researchers investigated. Thus, the factors feeding in to an academic sense of self-efficacy for teaching have not been empirically established. These researchers also identified a unique problem with regard to assessing teaching efficacy--the fact that the majority of their respondents demonstrated relatively high levels of teaching efficacy. This leads one to wonder if there is a false sense of teaching ability among university faculty, or if there was a self-selection process in which those with lower efficacy for teaching did not respond.
Teaching and Collective Efficacy Comparison

One study has investigated teacher and collective efficacy beliefs among college level instructors. Loup and colleagues (1997) sought to explore the dimensions of personal and collective efficacy of K-12 teachers (n=1041), college faculty (n=799), and social workers (n=812) through the comparison of three studies. The discussion that follows will focus on the research and comparison of the studies involving K-12 teachers and college faculty as these results are most salient to the current work. Factor analytic procedures conducted on the K-12 teachers revealed factors for both teaching and collective efficacy. However, for the higher education faculty these same procedures found evidence of a personal teaching efficacy factor, but not a collective efficacy factor. Based on these findings, these authors concluded that university faculty work primarily autonomously and, therefore, do not reveal the interdependence evident in K-12 teachers (Loup et al., 1997). The work of Loup and her colleagues provides at least one tangible outcome that should influence future work. That is the reality that efficacy beliefs differ across professional settings, even those that are relatively close in nature like the fields of K-12 and higher education.

Current study

The preceding studies serve as a backdrop for the current investigation. Our research seeks to explain how the current conceptualizations of the constructs of teacher and collective efficacy are manifested in college level instructors. The purpose of this study is to provide an exploratory investigation of teacher and collective efficacy of college level instructors.

Specifically, we sought to determine what, if any, relationship existed between college level instructors’ sense of teacher efficacy and prior teaching experience, professional level, academic domain, and a series of demographic variables, which included the sex, age, and ethnicity of the instructor.

We also wanted explore the role of collective efficacy in a university setting, thus we investigated how the degree of collective efficacy differed across academic departments as well as the relationship between perceptions of collective efficacy and professional level of the instructor. Finally, we wanted to determine if collective efficacy and teacher efficacy of college level instructors would be related to one another.

Method

Participants

The original sample consisted of 145 graduate students, lecturers, and faculty from a Research I university in the mid-Atlantic region. Some participants were dropped from the study due to 15% or more of their data missing, leaving a final sample size of 117. The sample included 75 graduate students, which were divided based on teaching experience. There were 24 graduate students with no college level teaching experience, referred to as graduate students throughout the study. The remaining 51 students were identified as graduate teaching assistants, who were currently assisting a professor with a course or who were teaching their own class autonomously. The remainder of the sample was comprised of the following: 24 non-tenured faculty (lecturers and assistant professors), and 18 tenured faculty (associate and full professors). Fifty-four of the participants were male and 63 were female. The ethnic backgrounds of participants in this study were identified as: 79% Caucasian, 6% African American, 5% Asian, 1% Hispanic, and 9% Other.

Measures

Background information. Participants were asked to report demographic information regarding their sex, age, ethnicity, their highest degree held, and their position within the university (i.e., graduate student, graduate assistant, lecturer, assistant professor, associate professor, full professor). In addition, participants were asked a series of questions related to their teaching experience, such as how many semesters they had taught and what other teaching experience they had outside university teaching. Teaching experience beyond the university was assessed by requesting participants to identify whether they had ever engaged in a series of teaching or teaching related tasks. These tasks included: elementary or secondary level teaching, tutoring experiences, church related teaching, adult education, and other non-college teaching experience not listed here.

Teacher Efficacy. The variable of teacher efficacy was measured using a 19-item adaptation of an earlier version of the Ohio State Teacher Efficacy Scale (OSTES, Tschannen-Moran & Woolfolk Hoy, 2001). This measure was selected for the current study for two key reasons. First, it is closely aligned with the definition and conceptualization of teacher efficacy used in this study. Secondly, this measure was created to assess the multifaceted nature of efficacy, and it provided a profile of efficacy beliefs in three domains of teaching. In the development of this measure three components of efficacy were identified as most salient to the teaching task and were targeted as areas of efficacy to assess. These components were engagement, instructional practice and classroom management (Tschannen-Moran & Woolfolk-Hoy, 2001).

The OSTES measure requests respondents to “Please indicate your opinion about each of the statements below with regard to your experiences with teaching undergraduates.” The qualifier “undergraduates” was added for our study to further contextualize the teaching efficacy we sought to identify. Given the contextual nature of efficacy, one would expect that differing levels of efficacy might appear for the instruction of undergraduate and graduate students. Also, as we were collecting data from teaching assistants, it was reasonable to expect that their only teaching experience would be with undergraduates, and we wished to keep as much consistency as possible across participants.

The OSTES (Tschannen-Moran & Woolfolk-Hoy, 2001) uses a traditional nine-point Likert type scale with anchors at one (nothing), three (very little), five (some influence), seven (quite a bit) and nine (a great deal). Given the restraints of the online survey tool we used in this study we needed to slightly modify the format of the original measure. For each item we were required to use a multiple choice-type format. Thus, following each item, participants were provided with a list from “a” to “i” with the options of “one” through “nine” with the requisite anchors in place. For all teacher efficacy items, a higher score equated to a higher level of efficacy. An example of our items is as follows (note the blank underline indicates a hollow circle, which would be selected by clicking on the circle with the mouse):
How much can you do to get through to the most difficult students?

- a. ___1 Nothing
- b. ___2
- c. ___3 Very Little
- d. ___4
- e. ___5 Some Influence
- f. ___6
- g. ___7 Quite A Bit
- h. ___8
- i. ___9 A Great Deal

Individual items from the original OSTES (Tschannen-Moran & Woolfolk-Hoy, 2001) were also slightly modified to better reflect the students and environment at the university level. Specifically, “schoolwork” was changed to “course work”; “school/classroom rules” was changed to “course policies”, and references to “class” or “classroom” were changed to “course.” Additionally, throughout the adapted measure we altered the references between “students” and “undergraduates.” A listing of all of the items used in this study can be found in the Appendix.

We employed factor analysis procedures on the data collected in order to examine the existence of a three-factor structure that was found in previous research, so that three sub-scales could be created based on the measure used. A principal component analysis was performed on the data received in response to the OSTES. Both oblique and orthogonal rotations were employed to compare factor loadings. For each rotation, Cattell’s scree test indicated that three factors should be extracted. The oblique and orthogonal rotations produced slightly different factor loadings for some of the scale items (see Table 1 for oblique factor loadings and Table 2 for orthogonal factor loadings). Because efficacy beliefs can vary from activity to activity (Bandura, 1997), we felt that these factors should represent distinct efficacy dimensions. Therefore, we chose the Varimax (orthogonal) rotation as the final solution.

The three independent dimensions of teacher efficacy produced by our data reflected specific tasks and abilities related to teaching. These dimensions included, Efficacy for Student Engagement (e.g., “How much can you do to get through to the most difficult undergraduate students?”), Efficacy for Instructional Practice (e.g., “How much can you do to adjust your lessons to the proper level for individual students?”), and Efficacy for Classroom Management (e.g., “How much can you do to get students to follow course policies?”). These factors are consistent with results of previous factor analysis findings (Tschannen-Moran & Woolfolk Hoy, 2001).

Subscale scores were created for each of the three factors by computing an unweighted average of the responses to each of the item loadings corresponding to that factor. An overall teacher efficacy score was also computed using the same procedure for all 19 of the items on the OSTES. For the present sample, alpha coefficients of reliability were .84 for the student engagement subscale, .77 for the instructional practice subscale, .64 for the classroom management subscale, and .88 for the overall teacher efficacy scale.

Collective Efficacy. Collective efficacy was measured using the Collective Efficacy Scale (Goddard, Hoy, & Woolfolk Hoy, 2000). Goddard, Hoy, and Woolfolk Hoy (2000) developed the first collective efficacy scale that utilizes a group orientation. Following their collective efficacy model, the items on the scale were worded so that teachers would consider both task analysis and group competence when assessing collective teacher efficacy. Furthermore, the researchers included both positively and negatively worded items. The result was a 21-item scale made up of four different types of items: (1) group competence/positive (e.g., “Teachers in this school are well prepared to teach the subjects they are assigned to teach”), (2) group competence/negative (e.g., “Teachers here don’t have the skills needed to produce meaningful student learning”), (3) task analysis/positive (e.g., “The opportunities in this community help ensure that these students will learn”), and (4) task analysis/negative (e.g., “The lack of instructional materials and supplies in this school makes teaching very difficult”).

Similar to the measure of teacher efficacy, adaptations were made to this scale to better reflect the university context. First the directions for completing the scale were altered to emphasize the teaching of undergraduates and the collective as the academic department rather than school. Second, the format of the questions for this scale was also altered to reflect a multiple-choice type style. Specifically, respondents were asked to rate their level of agreement on a six-point scale with the anchors of “strongly disagree” at one, and “strongly agree” at six, and the intervening options left as the digits between. In the analysis of the data, negatively worded items were reverse coded so that higher collective efficacy scores reflect higher levels of collective efficacy experienced. Thirdly, three specific terms were altered throughout the instrument. “Teachers” was changed to “course instructors,” “student” or “students” was changed to “undergraduate students” and “undergraduates” respectively, and references to “this school” were changed to “this department.” A listing of the exact items can be found in the Appendix.

Goddard and colleagues (2000) conducted an initial factor analysis on their data which indicated a two factor solution. These two factors reflected the group competence and task analysis dimensions of collective efficacy. However, many of their items dually loaded on both factors. Goddard and his colleagues attributed this dual loading to the theoretical connection between these two dimensions of collective teacher efficacy. Therefore, they performed a second factor analysis, calling for a one-factor solution. Results confirmed that collective teacher efficacy is a single construct, comprised of group competence and task analysis components (Goddard et al., 2000).

In the current study we followed a similar procedure and were able to make the same theoretical and empirical conclusion to utilize a one-factor solution. Based on this decision, a collective efficacy score was created by computing the unweighted average of responses to each of the 21 items. The alpha reliability coefficient for the current sample was .75.

Procedure

Questionnaires were administered using an online survey tool. An email notification requesting participation in the study was sent to every campus department secretary or department chair with the request that it be forwarded to each department’s faculty and graduate student body. The email
participation request included a web link that participants could click, leading them directly to the online survey. Answers were then submitted anonymously to an email address monitored by the authors. A second email request was sent out a month later to remind graduate students and faculty to complete the online survey. Email requests for participation were sent to 85 university departments, of which 28 responded.

Results

The purpose of the current study was to explore the manifestation of personal and collective efficacy among instructors of college level students. Specifically, we sought to identify way in which individual and collective efficacy beliefs about teaching are related to prior experience, levels of expertise, and the atmosphere in which teaching occurs.

Relating Teacher Efficacy to Characteristics of College Level Instructors

Prior Experience. We sought to explore the relationship between teacher efficacy beliefs and prior experience of college level instructors. In order to investigate whether prior experience related to instructors’ beliefs in their ability to affect student performance, a Pearson correlation was conducted between each of the teacher efficacy factors and the number of semesters taught by each instructor. No significant correlations were found.

We further investigated the relationship of prior experience to efficacy beliefs through an analysis of the responses to the item related to other teaching experiences. Instructors were grouped from 0 to 5, indicating the amount of prior teaching experience reported (i.e., 0 = no teaching experience, 5 = experience with each of the five teaching options provided). Analyses of variance (ANOVA) were conducted to investigate possible group differences on each dimension of the efficacy beliefs. No significant differences were found.

Professional Level. We also examined the relationship between teachers’ efficacy beliefs and their professional level (i.e., graduate student, graduate TA, lecturer, assistant professor, associate professor, and full professor). Specifically, this question sought to identify what pattern of efficacy beliefs would be found to exist across the professional levels investigated. As discussed in the overview, some research has found specific trajectories for the development of efficacy beliefs of elementary and secondary teachers across professional levels, (i.e., pre-service, novice, and experienced teachers). Therefore, considering these findings, we expected to find variation in efficacy beliefs across professional levels, as professional levels were considered to reflect both teaching experience and competence in the domain taught.

A series of ANOVAs were conducted to determine if graduate students, graduate teaching assistants, non-tenured faculty, and tenured faculty differed with regard to their efficacy beliefs. Interestingly, no significant differences were found. Upon further investigation, we discovered that our sample reported very similar efficacy beliefs on each of the three factors, regardless of their professional level. See Table 3 for a comparison of means. Despite lack of significance, the documented trend partially exists. Graduate students report higher levels of overall efficacy (mean = 5.34, SD = .99) than their graduate teaching assistant counterparts (mean = 5.28, SD = .80). Similarly, graduate students report higher levels of efficacy for instructional practice (mean = 5.62, SD = 1.12) than graduate teaching assistants (mean = 5.38, SD = 1.10).

Differences by Academic Domain. We sought to identify what, if any, relationship existed between levels of teacher efficacy and the academic domain within which each respondent worked. Specifically, we were interested in understanding what, if any, relationship existed between an individual’s field of study and his or her level or teaching efficacy. Participants for this study came from eight separate colleges within the university. However in order to obtain homogeneity of variance, we chose to analyze the data from the three colleges that had similar numbers of participants. Therefore, a series of ANOVA tests were conducted to compare the colleges of Behavioral and Social Sciences, Education, and Arts and Humanities. These tests revealed a significant difference between levels of efficacy for instructional practice for instructors from the college of Behavioral and Social Sciences (mean = 5.09, SD = 1.03) and those from the college of Education (mean = 6.07, SD = .95), F(3, 117) = 6.994, p = .00. Additionally, the mean overall efficacy score for Behavioral and Social Science instructors (mean = 5.07, SD = .95) differed significantly from the overall efficacy score for Education instructors (mean = 5.66, SD = .87), F(3, 117) = 3.387, p = .02.

Demographic Variables. ANOVA procedures were used to investigate potential differences in teacher efficacy along the demographic variables, of sex, age, and ethnicity. The results of these analyses demonstrated that males and females in this sample differ significantly in their levels of efficacy for student engagement (F(1, 117) = 7.249, p = .008), efficacy for instructional practices (F(1, 117) = 9.430, p = .003), and overall efficacy (F(1, 117) = 10.253, p = .002), with females reporting higher levels of efficacy in each area (see Table 4 for a comparison of means). Similar findings with regard to efficacy for teaching were found by Brennan and colleagues (1996) who identified that female college instructors had higher levels of general teaching efficacy than males.

Similar analyses were employed on the data for ethnicity. However, there was no significant difference in levels of teacher efficacy between ethnic groups. Pearson correlational analysis was performed to explore the relationship between age and instructors’ efficacy beliefs. No relationship was found.

Collective Efficacy

The role of collective efficacy was explored in relation to academic department and the professional level of the respondents. ANOVA tests were employed on the data from participants across the 28 academic departments included in the study. These tests found no significant differences between the collective efficacy beliefs of individuals in these departments. Furthermore, these collective efficacy beliefs did not differ significantly by the professional level of the instructors.

Collective and Teacher Efficacy

The relationship between collective and teacher efficacy was explored through the use of correlational
It is important to recognize that unlike studies of teacher efficacy done with elementary and secondary teachers, the participants in this study demonstrated no significant differences in teacher efficacy across either experience or professional levels. The non-teaching graduate students in this study have very similar teacher efficacy beliefs as the full professors, with their efficacy scores falling mid-range on the nine-point scale. There are some possible reasons for this lack of variation. First, as this was a completely voluntary process, it could be that those instructors and graduate students with lower levels of efficacy self-selected themselves out of the study. That is, when a low efficacious person received an email requesting their participation in a study on teaching, this had little appeal or interest for them.

Second, the data analyzed here was gathered from graduate students and instructors at a large Research I university. In such institutions, teaching is often considered secondary to research. As such, it is not the key focus or goal to which the individuals surveyed here are striving. The level and expectations for teaching in such institutions may make it acceptable for everyone to do ‘good enough’ in their teaching. Therefore, while graduate students through full professors may believe they can teach moderately well, they may also see teaching as a secondary role for which such moderation is acceptable.

Thirdly, there is some concern with the interpretation of items on the measure in light of the population surveyed. The original OSTES was created through the use of focus groups with practicing K-12 teachers for the assessment of teachers’ levels of efficacy. Consequently, the measure may contain language that is salient and clear to members of the teaching profession but may be unknown or unfamiliar to college instructors in disciplines untrained in pedagogy. For example, one item asks how capable the individual feels in his or her ability to use multiple assessment techniques. The respondents in this study may have considered such practices as authentic tasks, portfolio assessments and concept maps, or they may have thought of term papers, exams, multiple-choice and essays, as the means of determining their ability to use a ‘variety’ of assessment techniques. In creating a measure for individuals trained in the teaching profession, some meaning to items can be assumed. However, these assumptions may not be appropriate for our population. It could be that higher efficacious instructors considered the more non-traditional assessment techniques when responding to these items and felt only moderately able to achieve them successfully. Similarly, the less efficacious respondents may have considered the more traditional forms of assessment and as such felt moderately able to utilize them. Therefore, there may have been variance in the interpretation of the items which lead to a lack of variance in the responses received.

Lastly, the finding of similarity in teacher efficacy beliefs across experience and professional level mirrors, to some degree, the results of Soodak and Podell (1997). Soodak and Podell (1997) found that secondary-level teachers were significantly more homogeneous in their efficacy beliefs and reported significantly lower efficacy beliefs than elementary-level teachers. One could conclude that the university and high school environments are more similar and as such, the development of efficacy beliefs among these teachers should be similar. Soodak and Podell (1997) offer possible reasons for this homogeneity at the secondary-level, which should be considered in light of the research presented here. One reason is that the two populations, elementary and secondary, are inherently different, and that individuals within these populations have distinctly different motivations for the selection of their profession (Soodak & Podell, 1997). We would suggest that university instructors are yet another distinct population of teachers with another set of distinct motivations for their career choices and reasons for teaching.

A second explanation provided by Soodak and Podell (1997) is with regard to differences in the organizational context of the school across the elementary and secondary levels. Namely, these researchers suggest that because secondary schools are organized by departments or teams, the teachers in these schools may experience “greater collegiality, support and professionalism” (Soodak and Podell, 1997, p.220). These higher levels of support may lead to a homogenous sense of efficacy as new teachers enter the school and are socialized within their departments. Universities are also organized by departments, and a sense of collegiality and professionalism are often key aspects of the work environment. Hence, it may be that the instructors at the college level, who begin to become socialized as graduate students, are able to develop a more common understanding of what teaching means in this context, which may in turn lead to a more common belief pattern in their abilities to fulfill this role.

Differences in Teacher Efficacy across Gender and Academic Domains. The findings of this study replicated the trend that identifies women as having higher levels of efficacy for teaching (Brennan et al., 1996). One explanation of this continued trend could be in the understanding of the role of ‘teacher’ in society and the socialization practices that allow for women to more closely align themselves with this work. Bandura (1977, 1993, 1997) identifies four sources of information that are used in the construction of efficacy beliefs. These sources include vicarious experiences, in which individuals observe others and use these observations as a source of information in the beliefs that are formed about the self (Bandura, 1977, 1986, 1997). The power of vicarious experience is dependent on the similarity of the model observed to the observer and the actions observed (Bandura, 1997). Thus, because the majority of teachers in the United States are women, as females’ progress through school they are able to readily identify with their teachers and begin to develop a sense of efficacy based on their observations of a similar model.
Our findings

A significant positive relationship was found between participants from the colleges Behavioral and Social Sciences (BSOS) and Education (EDUC), with instructors from the College of Education reporting higher levels of efficacy. However, this does not seem particularly surprising. That is, we would expect that individuals, who have dedicated themselves to the study of education and teaching, would have higher levels of efficacy for teaching and perhaps a better understanding of what the teaching process entails.

Differences in Collective Efficacy. Our findings indicated that there were no significant differences in collective efficacy across departments or professional levels. In their assessment of collective efficacy among college faculty, Loup and her colleagues (1997) were unable to discern a factor of collective efficacy based on their data collected. They suggested that the autonomous nature of academic life is such that the need for a sense of collective efficacy is superfluous and not central to the goals of these professionals. Similarly, the work presented here suggests that, across departments assessed, the collective efficacy is relatively the same with regard to teaching.

Also, we were curious to explore possible differences in collective efficacy across professional levels, considering that full professors may have a different sense of the teaching community than graduate students or assistant professors. However, these non-significant results suggest that regardless of your professional standing, the perception of collective efficacy within the department is relatively cohesive, as one would hope it to be. The lack of significance with regard to collective efficacy across professional levels provides evidence that the same degree of collective efficacy is perceived among and between all members of the departmental communities represented here.

Implications and Future Research

At the onset of our investigation we were concerned with teaching practices at the college level and sought to gain an understanding of the current efficacy beliefs among pre and in-service college level instructors. This introductory study identified some important aspects of college level pre- and inservice instructors’ efficacy beliefs that may impact their teaching process. Our findings highlight implications and directions for future research with this population.

This study sought to understand college level instructors’ beliefs about their capability to teach, and we employed quantitative methodology to assess these beliefs. However, researchers conducting studies in this area may want to investigate the use of qualitative methodology to assess and understand the role of teaching to this population and how efficacy for teaching evolves and informs their practices. This qualitative research may then be used as a basis for creating a more specific and accurate measure of college instructors’ efficacy beliefs.

The lack of significant differences among this population may cause some to determine that, because there is no variation in beliefs among these teachers, the assessment of efficacy beliefs is relatively inconsequential to the understanding of ‘actual’ teaching. That is, the notion that what one believes about him or herself has little impact on the actual teaching abilities and practices of the individual. In
response that we see very similar beliefs across the groups focused on the pattern of beliefs among this population. We did not seek to investigate actual practice. We were focused on the pattern of beliefs among this population. The fact that we see very similar beliefs across the groups investigated, perhaps tells us more about the role of teaching at the university level than it does about the individual teachers surveyed. It is important to remember that the efficacy beliefs reported were neither overtly high nor low across participants. In fact, individuals felt moderately confident in their ability to teach undergraduate students. Given the research orientation of the university assessed, one may consider that for this population, teaching is only of moderate importance and does not involve the high stakes associated with teachers in elementary schools. A next crucial step would be to conduct a similar study with a similar sample from a university or college that is known to have teaching as its primary focus. In such environments there may exist greater variation in efficacy beliefs among the professional levels investigated, given the importance that teaching has in their professional lives.

Additionally, it would also be informative to identify if efficacy beliefs would differ across the academic settings of a research-focused and teaching-focused university. In Bandura’s (1997) efficacy theory is the expectation that to participate in any activity regardless of the individual’s efficacy level, he or she must also have some value or desire for the outcome. Potentially, the research setting does not value teaching to the same degree as it does other aspects of the academic’s work, therefore, in selecting goals and areas of improvement, it may be that individuals in a research setting place more effort and focus on their research. As a result, these individuals are able to engage in a greater number of mastery experiences and develop a stronger sense of efficacy with regard to their research duties. Similarly, if teaching is not valued, than the need to pursue changes in practice or developing techniques may not seem necessary. Consequently, their efficacy for teaching would vary little over the course of their career as they have done little to enhance it, and have taken few risks which could cause decreases in efficacy. In a teaching oriented environment one might expect the efforts and goals to be on teaching. Thus, efficacy for teaching in these contexts may be higher and/or more variable.

A final rejoinder to the notion that efficacy beliefs are uninformative for work with the college instructor population is that these beliefs provide a starting point for a conversation about teaching among this population. That everyone feels the same moderate level of ability to employ instructional practices, engage students in the learning process, and manage the classroom environment, suggests that these respondents may be unaware of teaching practices of other instructors and may lack the knowledge base needed to begin to have genuine reflection on their own practice. Further, beliefs play a central role in any change in action or knowledge (Pajares, 1992). If the ultimate goal is to improve teaching at this level, then it appears that, for these participants, the first step may be to help them recognize their own potential as teachers. Efficacy beliefs are future oriented. They reflect what an individual expects to be able to do. Elevated beliefs can cause an individual to extend beyond his or her own current abilities to reach a desired level of performance that they consider attainable. Thus, it may be necessary for this population of instructors to engage in discussions in which they can see that there are multiple methods for teaching these students and that they have the ability to engage in these practices.

In our view, the results of this study speak to the uniqueness of teaching at higher levels of education. Teaching at the college level comes with a sense of autonomy and isolation different from that experienced at elementary or secondary levels. While Bandura (1977, 1986, 1997) would say that we judge our efficacy beliefs from our direct and vicarious experiences, the nature of the university makes judging one’s teaching capability extremely difficult. At the college level, instructors may read each other’s research and compare curriculum vitae, but there are few, if any opportunities to make social comparisons about teaching practice. For the most part, feedback from teaching comes only from student evaluations, which may or may not inform an individual’s efficacy due to the types of questions asked, the number of students responding, and the nature of the students in that particular course. There are no standardized tests by which to measure your teaching abilities and no school assemblies where you can compare the behavior of your students to those in other classes. A college instructor’s notion of efficacy may be based only on his or her practice in comparison with itself.

While the nature of the university environment may be unique, college level instructors are still responsible for the educational experiences of many students. Thus, it is important to investigate the beliefs of college level instructors in an attempt to shed light on one element of the higher education classroom.
References


Appendix

The Ohio State Teacher Efficacy Scale

1. How much can you do to get through to the most difficult undergraduate students?
2. How much can you do to repair student misconceptions?
3. How much can you do to control disruptive behavior in the classroom?
4. How much can you do to motivate students who show low interest in course work?
5. How much can you do to get undergraduates to believe they can do well in course work?
6. How much can you do to ensure that your assessment strategies accurately evaluate student learning?
7. To what extent are you able to create lessons that hold students’ interest?
8. How much can you gauge student comprehension of what you have taught?
9. To what extent can you influence the self-discipline of your students?
10. How much can you do to overcome a student’s resistance to a particular topic?
11. How much can you do to get students to follow course policies?
12. How much can you do to improve the understanding of a student who is failing?
13. How much can you do to calm a student who is disruptive or noisy?
14. How much can you do to adjust your lessons to the proper level for individual students?
15. How much can you use a variety of assessment strategies?
16. To what extent can you vary teaching strategies to best communicate information to your students?
17. How well can you implement alternative strategies in your classroom?
18. How much can you do to get students to attend class regularly?
19. How much can you do to get students in your course to respect one another?

Collective Efficacy Scale

1. Course instructors in this department are able to get through to the most difficult students.
2. Course instructors in this department are confident they will be able to motivate their undergraduate students.
3. If an undergraduate doesn’t want to learn, instructors here give up.*
4. Instructors in this department don’t have the skills needed to produce meaningful student learning.*
5. If an undergraduate doesn’t learn something the first time, instructors in this department will try another way.*
6. Instructors in this department are skilled in various methods of teaching.
7. Instructors here are well prepared to teach the courses they are assigned to teach.
8. Instructors here fail to reach some students because of poor teaching methods.*
9. Instructors in this department have what it takes to get the undergraduate population to learn.
10. The lack of instructional materials and supplies in this department makes teaching very difficult.*
11. Instructors in this department do not have the skills to deal with student disciplinary problems.*
12. Instructors in this department think there are some undergraduates that no one can reach.*
13. The quality of departmental/college facilities here really facilitates the teaching and learning process.
14. The undergraduate students here come in with so many advantages, they are bound to learn.
15. The undergraduates come to this university/college ready to learn.
16. The students come to classes in this department prepared to learn.
17. Drug and alcohol use in the university/college community make learning difficult for students here.*
18. The opportunities in this university/college community help ensure that these students will learn.
19. Students in our courses just aren’t motivated to learn.*
20. Instructors in this department need more training to know how to deal with these students.*
21. Instructors in this department truly believe every undergraduate can learn.

Note: * indicates an item that was reverse coded

Author Note

We would like to thank Michelle Buehl for her expertise and thoughtful suggestions in the development of this paper.
<table>
<thead>
<tr>
<th>Item</th>
<th>Factor Loadings Oblique Rotation</th>
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<tbody>
<tr>
<td>1. How much can you do to get through to the most difficult undergraduate students?</td>
<td>Factor 1</td>
</tr>
<tr>
<td>2. How much can you do to repair student misconceptions?</td>
<td>.79</td>
</tr>
<tr>
<td>4. How much can you do to motivate students who show low interest in course work?</td>
<td>.46</td>
</tr>
<tr>
<td>5. How much can you do to get undergraduates to believe they can do well in course work?</td>
<td>.76</td>
</tr>
<tr>
<td>7. To what extent are you able to create lessons that hold students' interest?</td>
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<tr>
<td>9. To what extent can you influence the self-discipline of your students?</td>
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</tr>
<tr>
<td>10. How much can you do to overcome a student's resistance to a particular topic?</td>
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<td>12. How much can you do to improve the understanding of a student who is failing?</td>
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<td>19. How much can you do to get students in your course to respect one another?</td>
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<td>6. How much can you do to ensure that your assessment strategies accurately evaluate student learning?</td>
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<td>3. How much can you do to control disruptive behavior in the classroom?</td>
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<tr>
<td>11. How much can you do to get students to follow course policies?</td>
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<td>13. How much can you do to calm a student who is disruptive or noisy?</td>
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<td>2. How much can you do to repair student misconceptions?</td>
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<td>4. How much can you do to motivate students who show low interest in</td>
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<td>course work?</td>
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<td>5. How much can you do to get undergraduates to believe they can do</td>
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<td>9. To what extent can you influence the self-discipline of your</td>
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<td>10. How much can you do to overcome a student's resistance to a</td>
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<td>who is failing?</td>
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<td>6. How much can you do to ensure that your assessment strategies</td>
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<td>accurately evaluate student learning?</td>
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<td>15. How much can you use a variety of assessment strategies?</td>
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<td>16. To what extent can you vary teaching strategies to best</td>
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<td>communicate information to your students?</td>
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<td>19. How much can you do to get students in your course to respect</td>
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<td>11. How much can you do to get students to follow course policies?</td>
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### Table 3

*Comparison of Means: Teacher Efficacy By Professional Level*

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<th>Level</th>
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<th>Efficacy for Instructional Practices</th>
<th>Efficacy for Classroom Management</th>
<th>Overall Teacher Efficacy</th>
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<td>5.34</td>
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*Note:*

### Table 4

*Comparison of Means: Teacher Efficacy by Sex*

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<th>Gender</th>
<th>Efficacy for Student Engagement</th>
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<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
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<td>SD</td>
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<tr>
<td>Male</td>
<td>4.75**</td>
<td>1.13</td>
<td>5.16**</td>
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<td>Female</td>
<td>5.25**</td>
<td>.89</td>
<td>5.75**</td>
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*Note: * p < .05

### Table 5

*Intercorrelations Between Teacher Efficacy and Collective Efficacy*

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<tr>
<td>2. Efficacy for Instructional Practices</td>
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<td>3. Efficacy for Classroom Management</td>
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<td>.45**</td>
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<tr>
<td>4. Overall Teacher Efficacy</td>
<td>.88**</td>
<td>.86**</td>
<td>.69**</td>
<td>--</td>
<td></td>
</tr>
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<td>5. Collective Efficacy</td>
<td>.26**</td>
<td>.26**</td>
<td>.21*</td>
<td>.30**</td>
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*Note: * p < .05. ** p < .01.