

A COMPARISON OF THE SELF-EFFICACY SCORES OF PRESERVICE TEACHERS
BASED ON INITIAL COLLEGE EXPERIENCE

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The purpose of this study was to determine if any statistically significant difference exists between the self-efficacy scores of student teachers who began their college experience at the community college level and student teachers who began their education at the university level. The study was used to determine whether or not the type of initial college experience impacted the first two years of college study, in relation to the development of a sense of self-efficacy at the end of the program of study. Self-efficacy data were gathered from beginning student teachers at two comparative institutions. The participants were enrolled in the colleges of education at two large metropolitan universities. One university was located in southern Texas and the other was located in north central Texas. The *Teachers' Sense of Efficacy Scale* was the instrument used, as well as a researcher-made questionnaire that collected demographic data. In addition to pattern of education, other independent variables included age, gender, ethnicity, certification level sought by the participant, and the number of contact hours spent by the participant in early field experiences in K-12 classrooms.

A multiple regression analysis indicated no statistically significant difference in the composite score of the *Teachers' Sense of Efficacy Scale*, a measure of self-efficacy. The *TSES* also loads on three factors: Instructional Strategies, Classroom Management, and Student Engagement. Multiple regression analyses of the individual factor scores indicated no statistically significant predictive ability for self-efficacy on any of the subscales across initial college experience.

Multiple regression analyses as well as MANOVAs were conducted to determine if the

demographic variables of gender, age, ethnicity, G.P.A, certification level, and contact hours impacted *TSES* scores. The dependent variable was the general self-efficacy scores and the individual factor scores (i.e., Student Engagement, Instructional Strategies and Classroom Management) of student teachers as measured by the *TSES*. Analyses indicated a positive relationship between age, pattern of education, and global self-efficacy scores. In addition, a statistically significant relationship was indicated between age, pattern of education, and the factor of Instructional Strategies. No statistically significant relationship was found between initial college experience and global *TSES* scores or factor scores across the other demographic variables.

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CHAPTER 1

INTRODUCTION

In the halls of universities, in the closed offices of public school administrators, and in faculty meetings across the nation, the subject of teacher quality looms as an imminent topic of concern for those in charge of ensuring the best for America's schoolchildren. One consistent measure of a teacher's future success in the classroom is his or her self-efficacy, or belief in his or her ability to do the job. Research shows that "self-efficacy beliefs are strong predictors of behavior" (Woolfolk Hoy, 2004, p. 4). In other words, if a teacher believes that he or she is capable of managing his or her classroom and conducting meaningful lessons, he or she will be more likely to do just that. In light of this, schools of education in general and teacher preparation programs in particular need to be aware of the factors associated with increased levels of self-efficacy in order to produce the most capable, innovative, and dedicated teachers possible.

Traditionally, future teachers were prepared through the university system, completing prerequisites in order to achieve licensure to teach. Currently, there are several ways for teachers to obtain a license to teach in the public schools. One of these paths is for a student to complete the first two years of coursework at the community college level before transferring to a four-year college or university. For a variety of academic, financial, and personal reasons, many college-bound students are choosing to begin their education at community colleges (Hudson, 2000). Nationwide, statistics show that community colleges have significant enrollments, totaling 45% of all undergraduates (TERI, 1997). In addition, the transfer rate of education majors from community colleges into universities is higher than it is for other majors (Hudson, 2000). This presents a unique challenge and opportunity for colleges of education.

In 1992, the U. S. Department of Education found that 21% of teachers who graduated in 1992 began their education at community colleges (as cited in Haver & Watson, 1997). Likewise, a Florida study in 1985 found that 49% of students in Florida's public universities' teacher education programs had transferred there from the community college system (Division of Community Colleges, 1985). Currently, "transcript studies on the institutions attended by the nation's current classroom teachers suggest that more than 50% attended a community college for at least part of their education" (The Center for Community College Policy, 2003).

At most universities, the attempt to mold a preservice teacher begins early in the student's college career and culminates as he or she finishes student teaching. Particular problems can arise for students who transfer in order to complete their requirements to become teachers. They must not only transition and acclimate to a new educational setting, but also into a teacher education program. In addition to adjusting to life at a four-year institution and perhaps experiencing an increased work load in the classroom, the transfer student must also work to become a future educator—taking methods classes, doing research on instructional practices, and, at some colleges, participating in early field experiences. The effect that this kind of transition might have on preservice teachers' self-efficacy as they attempt to master so many things at once is unknown. In the quest for teacher quality, as well as quantity, this issue becomes of utmost importance since the link between a teacher's perceived self-efficacy and his or her potential effectiveness in the classroom has been established by educational research.

Statement of the Problem

The total demand for Texas public school teachers increased each year from 1996 to 2002. In 1996, the total demand was 26,642. By 2002, the number had risen to 37, 739 (Fuller, 2002). During that same time, the attrition rate in Texas increased, further adding to the problem of supplying schools with qualified, certified teachers.

In states that have documented the numbers, estimates show that 40-60% of all teachers begin their education in community colleges (DeBeal, 2001; Hudson, 2000). These percentages, combined with continual concerns of teacher quality, form the basis for this particular study. If there is a statistical difference between the self-efficacy scores of students who began their education at a community college and those who began at the university level, what do those numbers tell us about the colleges' programs and their abilities to help produce quality teachers? In addition, two separate studies, Henson (2001) and Tschannen-Moran and Woolfolk Hoy (1998) found that once efficacy beliefs were established they were more resistant to change. The time to effect change in a teacher's self-efficacy is early in the process of training and induction. These studies indicate that there is a small window of opportunity to establish and potentially increase a teacher's self-efficacy.

With the sheer numbers of students enrolled in community colleges and the percentage of those who continue their education to become teachers, research can help determine if community colleges could be helping to identify, recruit, and train people who can rectify the teacher shortage.

Research Questions and Hypotheses

The following questions are pertinent to this study:

1. What is the difference in scores on the Teachers' Sense of Efficacy Scale (TSES) (Tschannen-Moran & Woolfolk Hoy, A., 2001) between the group of students seeking teacher certification who began at the university level and those who began at a community college?
2. How much of this difference exists as a result of other factors such as age, gender, ethnicity, certification level, the number of hours spent by the participant in early field experiences in K-12 classrooms?

The following null research hypotheses were made for this study:

Null Hypothesis 1. There is no statistically significant difference (at the .05 level) on measures of self-efficacy between the group of teacher education students who began their studies at the community college and the group of students who began their education at the university level.

Null Hypothesis 2. There will be no statistically significant difference between the self-efficacy scores by initial college experience across age.

Null Hypothesis 3. There will be no statistically significant difference between the self-efficacy scores by initial college experience across gender.

Null Hypothesis 4. There will be no statistically significant difference between the self-efficacy scores by initial college experience across ethnicity.

Null Hypothesis 5. There will be no statistically significant difference between the self-efficacy scores by initial college experience across the certification level that the participant is seeking.

Null Hypothesis 6. There will be no statistically significant difference between the self-efficacy scores by initial college experience across the number of hours spent by the participant in early field experiences in K-12 classrooms prior to teaching

Purpose of the Study

This study's purpose was to determine the relationship of TSES scores of preservice teachers who were entering their semester of student teaching at the colleges of education at two, large metropolitan universities when comparing scores of candidates who began their college education at a community college versus at a four-year university. The scores were compared on the criterion of previous education background to determine if any statistically significant difference existed between the preservice teachers' perceived self-efficacy. Other factors that were considered were age, gender, ethnicity, the level of certification that the participant was seeking, and the number of hours spent by the participant in early field experiences in K-12 classrooms.

Significance of the Study

It was important to determine what unique differences exist in degree of self-efficacy, if any, between teachers who started their education at a community college and teachers who began their preparation at four-year colleges and universities. This study was designed to identify those potential differences. The results of this study could potentially indicate a need for more focus to be placed on community colleges as a source for identifying larger, more diverse quantities of teacher candidates.

Universities could benefit from this information as it might allow them to better understand transfer students who come into colleges of education. In order to provide an appropriate support system for student teachers, faculty members in teacher education programs

could benefit from knowledge of students' self-efficacy at the point of entering student teaching. If it were found that students who began their post-secondary education at the university level have a stronger sense of self-efficacy, then faculty may choose deliberate ways to strengthen self-efficacy of those students who began at the community college level. Likewise, if the community college students show greater measures of self-efficacy, that information could be used to validate the programs and services of the community college system. Understanding the self-efficacy scores of future educators can help teacher education programs find ways to produce more efficacious teachers who will be increasingly committed to the profession of teaching.

Assumptions of the Study

Following are some of the assumptions of this study. First, the researcher must assume that the TSES was equitably administered to the preservice teachers (the study participants) and scored appropriately. In addition, it is assumed that the preparation programs at each university are similar so as not to confound the analysis of data. Finally, the researcher must trust that students were relatively equally motivated in each of the programs under consideration.

Limitations of the Study

This study was conducted under the following limitations. First, the researcher had to trust the accuracy of the self-reporting on the questionnaire and the TSES. Furthermore, true random assignment of groups was not possible in this study, as the participants were students who were already enrolled in student teaching as a degree requirement. In addition, while the programs at each university were comparable, some students may have engaged in more intensive early field experiences than other students. Finally, the results of this study focus on those students at public universities; no private university students were represented.

Description of the Participants

The participants in this study were bachelor degree-seeking teacher education students enrolled in their student teaching experiences during the spring of 2005. Participants were enrolled in the colleges of education at two large, metropolitan universities. No post-baccalaureate initial certification students were included, to avoid contamination of data due to variables unique to students who already hold a baccalaureate degree.

Definition of Pertinent Terms

The following terms are defined as they are used in this study, in order to assist the reader in understanding all parts of the study.

Efficacy. Efficacy is defined as the “teachers’ belief or conviction that they can influence how well students learn, even those who may be considered difficult or unmotivated” (Guskey & Passaro, 1994, p. 628).

Teacher Efficacy Scale. The Teacher Efficacy Scale is a 22-item measure of efficacy (Gibson & Dembo, 1984).

Teachers’ Sense of Efficacy Scale. The Teachers’ Sense of Efficacy Scale is a 24-item measure of self-efficacy (Tschannen-Moran & Woolfolk Hoy, 2001).

Transfer Students. Transfer students are defined as those who began their post-high school education at a community college and then transferred into a university.

Description of the Design

This study was causal comparative. The comparison groups were formed by those teacher education students who began their education at the community college level and by those students who began at the university.

CHAPTER 2

LITERATURE REVIEW

Albert Bandura (1977) first introduced the cognitive social learning theory. He theorized that the behavior a person exhibits is influenced by his or her beliefs regarding an outcome expectation and an efficacy expectation. In an outcome expectation, a person estimates that “a given behavior will lead to a certain outcome” (p.193). Efficacy expectation refers to the belief that a person has regarding his ability to actually perform the “behavior required to produce the outcome” (p. 193). These two outcomes are distinct, particularly in the educational setting, because while a teacher may believe that specific teacher behaviors will lead to a better classroom environment, improved student learning, increased class participation, etc, that same teacher may not have confidence in his or her ability to perform those behaviors. These two sets of expectations have been labeled by educational researchers as “teaching efficacy” and “personal teaching efficacy” (Gibson & Dembo, 1984, p.573).

The concept of teacher efficacy was first introduced in two RAND Corporation studies that concluded that “teachers’ attitudes about their own professional competence, in short, appear to have major effects on what happens to projects and how effective they are” (Berman P, & McLaughlin, M., 1977, p. 137). In these studies, researchers examined a reading program used in Los Angeles schools. Both studies showed that a teacher’s sense of self-efficacy was related to how well children did in the program and how well the program was implemented (Armor, D., Conroy-Osequera, P., Cox, M., King, N., McDonnell, L., Pascal, A., Pauly, E., & Zellman, G., 1976; Berman, & McLaughlin, 1977). Teachers with higher levels of self-efficacy were found to have more success in advancing their students and in implementing the program.

In the RAND studies, Berman and McLaughlin (1977) determined teachers' levels of self-efficacy by computing a total score for teachers' responses to two statements about teaching. The statements, developed by researchers and based on Rotter's (1966) locus of control theory are: "When it comes right down to it, a teacher really can't do much because most of a student's motivation and performance depends on his or her home environment" and, "If I try really hard, I can get through to even the most difficult or unmotivated students" (pp. 159-160). Although these statements were based on Rotter's locus of control theory (1966), researchers Ashton and Webb (1982) reasoned that the two items actually corresponded to Bandura's (1982) self-efficacy and outcome expectancy dimensions of social cognitive theory.

In 1984, Gibson and Dembo developed a 30-item Likert scale to assess efficacy. This assessment is known as the Teacher Efficacy Scale. Of the original 30 items, 16 were later retained. Nine of the remaining items referred to Personal Teaching Efficacy (PTE) and the other seven corresponded to General Teaching Efficacy (GTE). This scale has played a vital role in the area of educational research since that time (Henson, 2001). Gibson and Dembo's (1984) development of this scale was the first notable effort to quantitatively measure self-efficacy. Since its inception, it has become the most widely used data collection instrument for the study of self-efficacy. Currently, researchers are proposing more accurate methods of measurement for future research.

As previously stated, "efficacy is perceived as teachers' belief or conviction that they can influence how well students learn, even those who may be considered difficult or unmotivated" (Guskey & Passaro, 1994, p. 628). Several studies point to the impact that a teacher's self efficacy has on desirable behaviors exhibited by teachers and on the effects that those behaviors have on students. Some of those studies are described as follows.

A 1984 study designed by Gibson and Dembo to develop an instrument to measure teacher efficacy led to the development of the Teacher Efficacy Scale (TES). During the process to develop the scale the researchers observed a small sub-sample of eight elementary school teachers in their classrooms. The study showed that more efficacious teachers responded more positively to students who gave incorrect responses to verbal questions and higher efficacy teachers were also more effective in leading students to correct answers than teachers with lower self-efficacy. Although this was a small study based on classroom observations of a limited group of teachers, these results help support the importance that efficacy plays in a teacher's ability to effectively carry out his or her duties.

In a study by Henson (2001), teachers were determined to score higher on measures of self-efficacy when they were allowed to participate in teacher-directed research. This study followed eight teachers and three instructional assistants in an alternative school that served 600 students. All but one of the teachers were female and they averaged almost ten years of teaching each. The average age of the participants was 44.

Throughout the school year, Henson's (2001) participants engaged in the participatory research and development model of teacher research. The group met in formal study teams six times during the year. During these two to three hour meetings, they identified topics of concern, developed measures by which to quantify or dismiss those concerns, and then determined ways to analyze and interpret the data collected. The teachers also met frequently during the year in small groups to discuss their findings.

In addition to qualitative measures such as interviews and field notes, teachers in Henson's (2001) study were also asked to complete quantitative measures of self-efficacy. One of the measures used was the Teacher Efficacy Scale (TES) (Gibson & Dembo, 1984), which

was given at the beginning of the study and again at the conclusion. Henson found that both general and personal teaching efficacies showed large average gains across time. Interestingly, this study also indicated that, in qualitative interviews, more experienced teachers expressed less change in self-efficacy than newer teachers. The results of this study are important because as colleges and universities attempt to prepare the most qualified teaching candidates, their focus should be on helping to develop the self-efficacy of the future educator. According to Tschannen-Moran, Hoy, and Hoy, "...once efficacy beliefs are established, they appear to be somewhat resistant to change" (1998, p. 235). Therefore, the time to have the most impact on an educator's sense of self-efficacy is during the formative years of teacher training.

In another study designed to examine teachers' sense of self-efficacy, Woolfolk and Hoy (1990) found that preservice teachers with high teaching efficacy scores who were also high in personal efficacy were more humanistic in their approach to pupil control. This study was conducted using the TES (Gibson & Dembo, 1984) to measure the efficacy of 182 liberal arts majors enrolled in the teacher preparation program at a state university on the east coast. Participants completed the TES as well as the Pupil Control Ideology form (Willower, Eidell, & Hoy, 1967), Problems in School Inventory (Deci, Schwartz, Sheinman, & Ryan, 1987), and the Work Environment Preference Schedule (Gordon, 1970). As a result of this study, the researchers indicated the need to look at personal teaching efficacy and general teaching efficacy as separate factors that can interact differently with scores on other measures.

Teacher efficacy has also been linked to commitment to teaching. A 1992 study by Theodore Coladarci surveyed 170 randomly selected Maine elementary school teachers and asked the question, "Suppose you had it to do all over again. In view of your present knowledge, would you become a teacher?" In addition, the teachers completed a modified version of the

TES and a measure of school climate developed by the Connecticut State Department of Education. This study found that “both general and personal efficacy significantly predicted commitment to teaching” (p. 332).

In another study by Greenwood, Olejnik, and Parkay (1990), teachers with a high sense of personal teaching efficacy as well as a high sense of general teaching efficacy were found to experience less stress related to their jobs. They were also found to focus internally when looking at how a teacher’s behavior related to the successes and failures that he or she experienced in his or her job. For this study, 321 teachers from nine “high stress” and nine “low stress” schools in Dade County Florida were administered a survey including the two RAND Corporation statements (Armor, et al., 1976; Berman & McLaughlin, 1977), the Wilson Stress Profile for Teachers (Wilson, 1979), and the Teacher Locus of Control (Rose & Medway, 1981). The findings for this study are important because they indicate that the most qualified, well-adjusted teachers may be those who exhibit high scores on measures of both personal teaching efficacy and general teaching efficacy. Again, the role of the community college and the university is to define ways to help bolster the efficacy levels of the student teachers in their programs.

A study conducted by Podell and Soodak (1993) found that high teaching and personal efficacy scores were associated with teachers’ perceptions regarding the abilities of students with minor learning disabilities. The researchers studied 240 regular education teachers from the New York metropolitan area. The teachers were each given a case study to read with information regarding a student with academic difficulties. In addition, the participants were asked to complete the TES. The study concluded that in the case studies where the child had mild learning problems and was from a low SES family, teachers with low personal teaching efficacy

were more likely to suggest the child be placed in special education classes. This is an important study, because as more children are mainstreamed, particularly those with mild learning disabilities, schools will find it desirable to hire and retain the most efficacious teachers possible.

In a similar study, 241 primary school teachers in the Netherlands were asked to read a case study of a second grader with a randomly assigned description of a learning or behavior problem. The participants were then asked to respond as to how difficult it would be to provide adequate education for the child and to indicate the likelihood that the participant would refer the child to special education classes. Participants also completed a version of the Dutch Teacher Self-Efficacy Scale (Span, Abbring, & Meijer, 1985). The teachers with higher scores on the efficacy scales were less likely to indicate the education of the child as a problem and were also less likely to refer the child to special education classes (Meijer & Foster, 1988).

Paese and Zinkgraf (1991) studied 35 physical education majors during their 12-week student-teaching experience. Students were asked to complete the TES and selected subscales from the Teacher Stress Scale. Participants completed both measures at the beginning of the semester and again at the end of the semester. The results showed that personal teaching efficacy increased as the student teachers gained clearer insight as to the expectations of the student teaching experience.

A study of 156 teachers and 83 teacher education students in Louisiana indicated that efficacy ratings between the two groups were quantitatively different (Herbert, Lee, & Williamson, 1998). Participants were asked to complete a modified version of the TES as well as a short questionnaire with identifying information and an open-ended section where participants were asked to explain their efficacy ratings. The external dimension (as described by Guskey & Passaro, 1994) revealed scores significantly lower with preservice teachers than

with experienced teachers. In other words, teacher education students seemed to underestimate the amount of influence that external factors will have on their ability to influence student learning. During the idealistic, formative years of college, many preservice teachers are apt to believe that their personal abilities and attributes can outweigh any external pressures that might arise. The role of the colleges is then to foster the idealistic, optimistic outlook of teacher candidates while preparing them for the external factors that can so easily lead to burnout and attrition. The research in the field of self-efficacy continually points to a relationship between a teacher's belief in his or her ability to teach and the actual ability to do so.

Although most of the current research in teacher self-efficacy has been based on results of the Teacher Efficacy Scale (Gibson & Dembo, 1984), many researchers have come to question its construct validity (Henson, 2001). For example, Guskey and Passaro (1994) noted concerns that prior research on the self-efficacy of teachers is really a locus of control issue and not a more complex distinction between personal teaching efficacy and general teaching efficacy. They expressed these concerns after their 1994 study that involved 342 participants. Two hundred and eighty-three of the subjects were experienced classroom teachers and 59 were preservice teachers. Participants were given a modified version of the TES in which the wording of random items on the scale had been changed to reflect either internal or external orientation. "For example, one of the internal items, 'When a student does better than usually, many times it is because *I* exert a little more effort' was altered to read 'When a student does better than usually, many times it is because *the teacher* exerts a little extra effort'" (p. 633). This changed the emphasis from a personal teaching efficacy question to a general teaching efficacy question. The researchers found that despite the modified wording, teachers, both preservice and experienced, did not distinguish between a normative teacher's ability to affect students and their

own personal ability to do the same. However, they did make distinctions regarding the influence they and teachers in general have on the learning of students. Guskey and Passaro (1994) believe that part of the problem is that Bandura's (1977) concepts of outcome and efficacy expectations can not be directly applied to general teaching efficacy and personal teaching efficacy. In light of this and other criticism, new constructs of teacher efficacy have been proposed and new measurements have been developed to address the shortcomings of the TES. While some problems exist with the use and interpretation of the results obtained from the TES, the body of research still establishes a link between a teacher's self-efficacy and the extent of his or her teaching abilities.

The imminent issue at hand then becomes the need to determine if any difference exists in the pool of teacher candidates with regards to self-efficacy based on their initial college experience. It is critical that this issue be explored since estimates show that community colleges enroll 45% of all the nation's undergraduates (TERI, 1997). Recognizing this, states such as Maryland, Virginia, and Florida have already begun to make plans to tap into the potential to systemize the role that community colleges can have in helping to prepare teachers for the classroom. Records from Maryland indicate that roughly 40-60% of all teachers begin their preparation in community colleges (DeBeal, 2001). Likewise in Florida, almost 50% of the students in teacher education programs in Florida's public universities come through the community college system (Division of Community Colleges, 1985). Although statistics are not available for all states, it is reasonable to estimate that other states nationwide are exhibiting similar trends. In light of this, it is essential for community colleges to be expected to play a more vital role in the development of new teachers.

A national study of community colleges with teacher recruitment programs that help students prepare to transition into teacher education programs and complete their baccalaureate degrees was conducted. The researchers found that, of the program respondents who returned their surveys, the transfer average from the community colleges' teacher education programs to a four year university was 50.3%, more than double the national average for all students transferring from community colleges (Hudson, 2000). Recruiting New Teacher, Inc. (RNT) conducted this survey and had 205 responses. Nearly 80% of the responding colleges had articulation agreements with universities. These programs were found to serve an ethnically diverse range of students, with almost 40% being non-white. Almost 47% of the programs' participants were between the ages of 18 and 24, with another 42% being 25-40. An additional 9% were over the age of 40. Similar to the nation's average for current teachers, males comprised an average of 21.3% of the programs' enrollments. This study is important because it underscores the understanding that education majors can successfully begin their education at community colleges and then transfer to a four-year college to complete their goal of becoming teachers. For many students, the community college can be a vital link between high school and becoming a teacher of record in a classroom.

The relationship between self-efficacy and teacher behavior has been well established in the research. Clearly, a teacher's ability to reach students and affect change begins with his or belief that he or she can. As Pajares stated, "Efficacy beliefs help determine how much effort people will expend on an activity, how long they will persevere when confronting obstacles, and how resilient they will prove in the face of adverse situations—the higher the sense of efficacy, the greater the effort, persistence, and resilience" (1996, p. 544). This is a powerful statement.

Understanding the self-efficacy scores of students in teacher preparation programs can be the first step in improving the pool of teacher candidates.

CHAPTER 3

METHODS AND INSTRUMENTATION

The purpose of this study was to determine if any statistically significant difference exists between the self-efficacy scores of baccalaureate degree-seeking preservice teachers who began their education at the community college and preservice teachers who began their education at a four-year college or university.

This study sought to answer the following questions:

1. Do self-efficacy scores of preservice teachers differ based on initial college status?
2. Do self-efficacy scores of preservice teachers differ by initial higher education (university versus community college) experience across age, gender, ethnicity, certification level sought (grades EC-4, grades 4-8, or grades 8-12), and the number of hours spent by the participant in early field experiences in K-12 classrooms?

Participants

The participants in this study were baccalaureate degree-seeking education students from the colleges of education at two large metropolitan universities. These students were enrolled in their semester of student teaching and were beginning the final requirements prior to being eligible to be teachers of record in their own classrooms. This study involved 115 total participants from the two universities. The participants in this sample were not selected at random. They were already enrolled to begin their semester of student teaching. These groups were purposely selected because they primarily consisted of baccalaureate preservice teachers entering their first student teaching experience. Any post-baccalaureate pre-service teachers were asked not to participate in the study.

Instruments

Two instruments were used in this study. A demographic survey was developed by the researcher and field tested by ten current teachers in K-12 classrooms. The instrument was field tested to ensure clarity of the questions and to determine the length of time necessary to complete the survey. Comments from those individuals, as well as feedback from the doctoral committee, were used to improve the wording on the demographic questionnaire. This questionnaire was used to collect information from the preservice teachers at the beginning of the student teaching semester. Participants were asked to report their age, gender (optional), ethnicity (optional), level of parents' education, G.P.A. at the conclusion of the first 60 hours of college coursework, and initial college type of institution. This survey had ten items and was entitled, "Demographic Data Sheet" (see Appendix). The data collected from this instrument are summarized later in this chapter and are detailed in table form.

The second instrument used in this study was a measure of self-efficacy. Because of the previously noted shortcomings of the Teacher Efficacy Scale (Gibson & Dembo, 1984) addressed in the literature review, the Teachers' Sense of Efficacy Scale (TSES) (Tschannen-Moran & Hoy, 2001) was used for this study. The TSES long form consists of a 24-item scale and is recommended for use with preservice teachers. This scale asks for a self-report of teacher beliefs and was constructed using a nine-point, Likert-type response scale with the options of 1 (*nothing*), 3 (*very little*), 5 (*some influence*), 7 (*quite a bit*), and 9 (*a great deal*). The sentences on the scale all begin with the stems, "How much...", "How well...", or "To what extent..." and ask participants to gauge their abilities to handle various situations related to teaching. For example, one item is "How much can you do to control disruptive behavior in the classroom?" Participants were asked about their proficiency with instructional practices, maintaining

classroom environments, and engaging students. The reliability for the 24-item scale was found to be 0.94. The construct validity was examined by correlating the TSES and other measures of teacher efficacy. The results indicated that the TSES “could be considered reasonably valid and reliable” (Tschannen-Moran & Woolfolk Hoy, 2001, p.18).

In addition, the TSES loads on three factors that affect the work life of teachers: 1) efficacy for instructional strategies, 2) efficacy for classroom management, and 3) efficacy for student engagement. Reliabilities for the subscales of the TSES were found to be “.91 for instruction, .90 for management, and .87 for engagement” (Tschannen-Moran & Woolfolk Hoy, 2001, p. 20). Because the factor structure has been found to be less distinct for preservice teachers, Tschannen-Moran and Woolfolk Hoy caution that the subscale scores “may have little meaning for prospective teachers who have yet to assume real teaching abilities” (2001, p.22).

Design

This study was causal comparative. The comparison groups were formed based on the criterion of initial college experience. The TSES scores of those who began their education at a community college were grouped together and compared with the scores of those students who began at a university. Regression analyses or MANOVAs were conducted to ascertain any impacting variables other than initial college experience.

Procedure

All participants were beginning their final semester of program requirements at their colleges of education. The students completed the demographic survey and the TSES in January at their student teacher orientation. This orientation was held just days before students were assigned to their student teaching assignments. Although most teacher education students at these institutions have prior field experiences in K-12 classrooms, the student teaching

assignment is usually the first formal, structured experience in which the preservice teacher gets the opportunity to assimilate all the knowledge and skills that he or she has been obtaining. In early field experiences, most education students will not simulate all duties of the teacher of record, as they will be expected to during student teaching. Measuring the students' sense of self-efficacy at this time prevented the research from being confounded by the nature of the student teaching experience. In other words, the scores were not affected by any positive or negative experiences that the student teacher might have had during his or her student teaching assignment.

The participants were asked to complete a short demographic survey. Table 1 summarizes the mean age of the participants as well as the number of credit hours that they had attained at a community college (if applicable) and their G.P.A after the completion of the first two years of study.

Table 1

Participant Demographics (Continuous Variable Data)

	<i>n</i>	Mean	Standard Deviation
Age	115	25.72	6.947
Credit hours at CC	50	52.16	23.406
G.P.A	103	3.3205	.47268

The average age of the participants was 25.72 years. The participants' average G.P.A. at the end of the first 60 hours of college credit was 3.32. For those students whose initial college experience was a community college ($n=50$), the average number of credit hours completed at the community college was 52.16.

In addition, participants were asked to identify their gender, ethnic background, the type of certification they were seeking, and their status as a first-generation college student. This information is summarized in Table 2.

Table 2

Participant Demographics (Categorical Data)

Category	<i>n</i>	Total %
Male	16	13.9
Female	99	86.1
Ethnicity		
African American	9	7.8
American/Alaskan Native	2	1.7
Asian/Pacific Islander	3	2.6
Caucasian	82	71.3
Hispanic	19	16.5
Total	115	100
Certification Level Sought		
EC-4	57	49.6
4-8	16	13.9
8-12	14	12.2
All Level	28	24.3
Total	115	100
1 st generation college student	50	43.5

As indicated in Table 2, the study participants included 16 males and 99 females. Of those, nine were African American, two were American/Alaskan Native, three were Asian/Pacific Islander, 82 were Caucasian, and 19 were Hispanic. Fifty-seven were seeking teaching certificates for Early Childhood – 4th grade, 16 were seeking licensure to teach 4th-8th

grade, 14 were seeking licensure for 8th-12th grade, and 28 were seeking to obtain an all-level certification. Fifty of the participants were first generation college students.

Finally, students were asked to indicate their patterns of higher education. On the survey, students were asked to self-select one of six categories that best described their college experiences. Following is the summary of the responses.

Table 3

Number of Students Indicating Each Type of Education Experience

Group	Pattern of Education	<i>n</i>	% of Sample
A	High School → University	45	39.1
B	High School → Community College → University	40	34.8
C	High School → University → Community College → University	6	5.2
D	High School → University A → University B	12	10.4
E	High School → Community College A → Community College B → University	2	1.7
F	Other	10	8.7
Total		115	100

As shown Table 3, 45 participants said that their pattern of education had been enrolling directly into a university after high school and 40 reported that they had gone to community college after high school. These were Choices A and B, respectively, on the survey. In addition,

six participants chose Category C, which indicated that they had attended a university, then a community college, and then back to a university. Another 12 participants reported that they attended one university before transferring to a different university. Two participants said that they attended more than one community college before transferring to a university. Finally, ten participants chose Option F, which was labeled “other.” For this category, participants were encouraged to write in their own patterns of education. Most of the respondents in this category indicated that they went into the military after high school and then pursued a higher education.

From the original six groups, two comparison groups were formed for the purpose of this study. Group F, the group of students that indicated “other” on their pattern of education, was eliminated from the study due to the fact that the patterns varied greatly from the other respondents. In addition, Group C, which indicated the pattern of attending a university then attending a community college and then returning to a university, was eliminated due to a low response rate. The descriptive data from Group D, where students attended more than one university after high school were similar to those students in Group A. Therefore, Group D was collapsed with Group A for a new total of 57. Likewise, the two participants in Group E that had attended more than one community college after high school were collapsed with Group B for a new total of 42. The newly defined Groups A and B formed the comparison groups for this study. The first group ($n=57$) formed the comparison group that consisted of those students who enrolled in a university after high school. The second group ($n=42$) formed the comparison group that consisted of those students who attended community college after completing high school. These new numbers can be found in Table 4.

Table 4

Collapsed Comparison Groups

Category	<i>n</i>	Total %
High School→Univ.	57	49.6
High School→CC	42	36.5
Eliminated from study	16	13.9
Total	115	100

The independent variables for the analyses in this study were the initial college experience, age, ethnicity, gender, level of certification sought, and the number of hours spent by the participant in early field experiences in K-12 classrooms. The dependent variable included the self-efficacy scores of preservice teachers as measured by the TSES.

Multiple regression analyses and MANOVAs were conducted on the primary and secondary variables to determine their ability to predict or explain the global or factor scores on the TSES.

Those analyses are further discussed in Chapter 4.

CHAPTER 4

PRESENTATION OF DATA

This study was conducted to determine if any statistically significant difference in self-efficacy scores, as measured by the Teachers' Sense of Efficacy Scale (Tschannen-Moran & Woolfolk Hoy, A., 2001), exists between student teachers who began their education at the community college level compared with student teachers who began their education at the university level. In addition, the study sought to determine if particular secondary variables interacted with initial college experience to help predict higher scores on the measure of self-efficacy, the TSES.

The participants in this study were 115 student teachers from the colleges of education located at two large, metropolitan Texas universities. The participants were asked to complete a short demographic questionnaire and the Teachers' Sense of Efficacy Scale (Tschannen-Moran & Woolfolk Hoy, A, 2001). The TSES reports a global self-efficacy score as well as the scores of efficacy on three subscales: Student Engagement efficacy, Instructional Strategies efficacy, and Classroom Management efficacy. The independent variable of primary interest in this study was the pattern of education (i.e., whether the student teachers' first college experience was at a university or community college). As secondary hypotheses, also of interest were the demographic variables of gender, age, ethnicity, certification level, and K-12 contact hours in early field experiences, as they impact TSES scores. The dependent variable was the set of general self-efficacy scores and the individual factor scores (i.e., Student Engagement, Instructional Strategies and Classroom Management) of student teachers as measured by the TSES.

Description of the Sample

Of the 115 student teachers participating in this study, 86% were female and 14% were male. The mean age for the participants was 25.72 ($SD = 6.95$). Seventy-one percent of the sample was Caucasian, 7.8% African-American, 16.5% Hispanic, 1.7% American/Alaskan Native, and 2.6% Asian/Pacific Islander. The average GPA upon completion of 60 college hours was 3.32 ($SD = .47$).

There were participants from all areas of state certification, with 49.6% seeking certification in Grades EC-4, 13.9% seeking certification in Grades 4-8, 12.2% seeking certification in Grades 8-12, and 24.3% seeking certification in all levels. Student teachers had an average of 102.1 ($SD = 77.2$) contact hours with 74.9 ($SD = 73.7$) of those being active hours.

Concerning pattern of education, student teachers selected one of six education patterns that best described their experience. Those patterns and the number of students choosing each are fully discussed in Chapter 3 and summarized in Table 3.

For the purposes of all analyses, Groups A and D were combined and labeled as “University as 1st experience,” and Groups B and E were combined and labeled as “Community College as 1st experience.” Participants in Group F were omitted from analyses because their education experience was very different from others in the study. Most often they reported some military experience immediately after high school which led them to college. Participants in Group C were also omitted from the analyses, as their educational experience was unique and did not fit into either category for the purposes of this study.

Primary Hypothesis Testing

Of primary interest in this study was the main effect that type of first college experience had on TSES scores. The null hypothesis stated that there would be no statistically significant difference on the TSES scores between the group of student teachers who began their studies at the community college level and the group of students who began their education at the university level.

The TSES is arranged in a Likert scale format and the respondents marked each item on a scale of one to nine. Marking a statement with a one correlated with a low belief in one's efficacy while marking a nine indicated a respondent's belief that he or she was extremely efficacious in a particular area. The group means for the global TSES scores, as well as the individual factor scores, are located in Table 5.

Table 5

TSES Global Score and Individual Factor Score Means (Standard Deviations in Parentheses) by University 1st and Community College 1st Groups

Group	TSES Global	Student Engagement	Instructional Strategies	Classroom Management
University	7.54 (.76)	7.54 (.81)	7.52 (.89)	7.55 (.86)
Community College	7.74 (.71)	7.68 (.78)	7.75 (.82)	7.78 (.74)

As shown in Table 5, the University group mean on the TSES was 7.54 with a standard deviation of .76 and the Community College group mean on the same measure of self-efficacy was 7.74 with a standard deviation of .71.

A regression analysis was used to determine whether first college experience was a statistically significant predictor for the composite TSES scores and the scores on each individual TSES factor. Tables 6-9 report the results from the multiple regression analyses for both the global efficacy scores and the factor scores.

Table 6

TSES Global Scores Predicted from 1st College Experience

TSES Global Score (Model $R = .136$; $R\text{-square} = .018$; Adjusted $R\text{-square} = .007$)

Source	<i>SS</i>	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Model	.907	1	.907	1.668	.20
Residual	48.392	89	.544		
Model	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	<i>p</i>
Intercept	7.33			31.17	.00
Education Pattern	.202		.136	1.29	.20

As shown in Table 6, first college experience was not a statistically significant predictor of the global scores on the TSES. The F value of 1.668 ($df=1, 89$) resulted in a p value of .20 and failed to yield a statistically significant result at $p<.05$.

Table 7

Student Engagement Scores Predicted from 1st College Experience

TSES Student Engagement Score (Model $R = .091$; $R\text{-square} = .008$; Adjusted $R\text{-square} = -.003$)

Source	<i>SS</i>	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Model	.475	1	.475	.746	.39
Residual	56.635	89	.636		
Model	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	<i>p</i>
Intercept	7.391			29.04	.00
Education Pattern	.146		.091	.864	.39

Table 8

Instructional Strategies Scores Predicted from 1st College Experience

TSES Instructional Strategies Score (Model $R = .135$; $R\text{-square} = .018$; Adjusted $R\text{-square} = .007$)

Source	<i>SS</i>	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Model	1.216	1	1.216	1.641	.20
Residual	65.965	89	.741		
Model	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	<i>p</i>
Intercept	7.28			26.52	.00
Education Pattern	.234		.135	1.28	.20

Table 9

Classroom Management Scores Predicted from 1st College Experience

TSES Classroom Management Score (Model $R = .138$; $R\text{-square} = .019$; Adjusted $R\text{-square} = .008$)

Source	<i>SS</i>	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Model	1.138	1	1.138	1.737	.191
Residual	58.329	89	.655		

Model	Unstandardized Coefficients	Standardized Coefficients	<i>t</i>	<i>p</i>
Intercept	7.323		28.35	.00
Education Pattern	.227	.138	1.32	.19

The results for the regression analyses on the factor scores predicted from initial college experience are reported in Tables 7-9. As indicated in these tables, first college experience was not a statistically significant predictor of the factor scores on the TSES. For the factor of student engagement, the F value of .746 ($df=1, 89$) resulted in a p value of .39 and failed to yield a statistically significant result at $p<.05$. For the factor of instructional strategies, the F value of 1.641 ($df=1, 89$) resulted in a p value of .20 and failed to yield a statistically significant result at $p<.05$. Finally, for the factor of classroom management, the F value of 1.737 ($df=1, 89$) resulted in a p value of .191 and failed to yield a statistically significant result at $p<.05$. As with the global TSES scores, initial college experience was not a statistically significant predictor of any of the factor scores.

Secondary Hypothesis Testing

Effects for other variables that could potentially interact with the relationship between first college experience and TSES scores were explored. Specifically, age, gender, ethnic

background, certification level, and number of contact hours were entered into multiple regression analyses or MANOVAs (whichever was appropriate) with TSES global and individual factor scores as the dependent variables.

Age and Initial College Experience

A multiple regression model with age and type of initial college experience was constructed. As shown in Tables 11 and 13, age, type of first college experience, and the interaction between the two significantly predicted total scores on the TSES and scores on the Instructional Strategies factor. In this model there is a positive relationship between age and TSES global scores and Instructional Strategies scores and first college experience and TSES global and Instructional Strategies scores. The interaction of age and education pattern also shows a positive relationship with TSES global and Instructional Strategies scores.

In order to better understand the relationship between the demographic factors, efficacy scores, and initial college experience, bivariate correlations among age, first college experience, and TSES global and factor scores were calculated. These correlations are shown in Table 10 and were entered into the regression model along with their interaction term.

Table 10

Bivariate Correlations among Age, 1st College Experience and TSES Scores

	<u>TSES Global</u>	<u>Student Engagement</u>	<u>Instructional Strategies</u>	<u>Classroom Management</u>
1 st College Experience	.136 <i>p</i> =.20	.091 <i>p</i> =.39	.135 <i>p</i> =.20	.138 <i>p</i> =.19
Age	.128 <i>p</i> =.19	.116 <i>p</i> =.24	.144 <i>p</i> =.14	.088 <i>p</i> =.37
1st College Experience x Age	.195 <i>p</i> =.07	.155 <i>p</i> =.14	.187 <i>p</i> =.08	.181 <i>p</i> =.09

These correlations showed a positive relationship between age and efficacy and a positive relationship between initial college experience and efficacy. On their own, these bivariate correlations are not statistically significant; however, when entered into a regression model together with their interaction term, all three become statistically significant predictors of TSES global and instructional strategies scores. The regression model for these variables is displayed in Tables 11-14.

Table 11

TSES Global Scores Predicted from 1st College Experience and Age

TSES Global Score (Model $R = .295$; $R\text{-square} = .087$; Adjusted $R\text{-square} = .056$)

Source	<i>SS</i>	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Model	4.299	3	1.433	2.771	.046
Residual	45.001	87	.517		

Model	Unstandardized Coefficients	Standardized Coefficients	<i>t</i>	<i>p</i>
Intercept	14.643		4.29	.00
1 st College Experience	-3.769	-2.525	-2.163	.033
Age	-0.319	-2.798	-2.112	.038
Age x 1 st College Experience	0.171	4.766	2.231	.028

Three factors were examined in this model, initial college experience, age, and the interaction between age and first college experience. For initial college experience, $t=-2.163$ ($df=3, 87$) resulted in a p value of .033, yielding a statistically significant result at $p<.05$. For the factor of age, $t=-2.112$ ($df=3, 87$), resulting in a p value of .038. For the interaction between age

and initial college experience, $t=2.231$ ($df=3, 87$), resulting in a p value of .028. This model shows age, initial college experience, and the interaction between age and initial college experience to be statistically significant predictors of global scores on the TSES. The R -square=.087, indicating that approximately 9% of the total variance in the TSES global scores can be explained by the interaction between age and initial college experience.

Table 12

Student Engagement Scores Predicted from 1st College Experience and Age

TSES Student Engagement Score (Model $R = .245$; R -square = .06; Adjusted R -square = .028)					
Source	SS	df	Mean Square	F	p
Model	3.437	3	1.146	1.857	.143
Residual	53.673	87	.617		
Model	Unstandardized Coefficients		Standardized Coefficients	t	p
Intercept	13.843			3.714	.00
1 st College Experience	-3.403		-2.118	-1.788	.077
Age	-0.281		-2.288	-1.701	.092
Age x 1 st College Experience	0.152		3.937	1.816	.073

Table 13

Instructional Strategies Scores Predicted from 1st College Experience and Age

TSES Instructional Strategies Score (Model $R = .307$; $R\text{-square} = .094$; Adjusted $R\text{-square} = .063$)

Source	<i>SS</i>	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Model	6.32	3	2.107	3.011	.034
Residual	60.862	87	.700		
Model	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	<i>p</i>
Intercept	16.703			4.208	.00
1 st College Experience	-4.823		-2.768	-2.38	.019
Age	-0.413		-3.097	-2.346	.021
Age x 1 st College Experience	0.218		5.224	2.455	.016

Table 14

Classroom Management Scores Predicted from 1st College Experience and Age

TSES Classroom Management Score (Model $R = .245$; $R\text{-square} = .06$; Adjusted $R\text{-square} = .027$)

Source	<i>SS</i>	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Model	3.56	3	1.187	1.847	.145
Residual	55.907	87	.643		
Model	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	<i>p</i>
Intercept	13.365			3.513	.001
1 st College Experience	-3.072		-1.874	-1.582	.117
Age	-0.264		-2.103	-1.564	.121
Age x 1 st College Experience	0.142		3.597	1.659	.101

In these models, the only subscale that could be positively predicted by the interaction between age and initial college experience was that of instructional strategies. For initial college experience, $t=-2.38$ ($df=3, 87$) resulted in a p value of .019, yielding a statistically significant result at $p<.05$. For the factor of age, $t=-2.346$ ($df=3, 87$), resulting in a p value of .021. For the interaction between age and initial college experience, $t=2.455$ ($df=3, 87$), resulting in a p value of .016. This model shows age, initial college experience, and the interaction between age and initial college experience to be statistically significant predictors of the Instructional Strategies factor scores on the TSES. The $R\text{-square}=.094$, indicating that approximately 10% of the total variance in the Instructional Strategies factor scores can be explained by the interaction between age and initial college experience.

Gender and First College Experience

Gender, initial college experience, and the interaction between gender and initial college experience were entered into a multiple regression model to predict TSES global scores as well as scores for Student Engagement, Instructional Strategies and Classroom Management. Details of the regression model are listed in Tables 15-18.

Table 15

TSES Global Scores Predicted from 1st College Experience and Gender

TSES Global Score (Model $R = .136$; $R\text{-square} = .026$; Adjusted $R\text{-square} = -.008$)

Source	<i>SS</i>	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Model	1.258	3	.419	.76	.52
Residual	48.041	87	.552		

Model	Unstandardized Coefficients	Standardized Coefficients	<i>t</i>	<i>p</i>
Intercept	8.134		5.486	.00
1 st College Experience	-.428	-.287	-.467	.641
Gender	-.429	-.19	-.555	.58
Gender x 1 st College Experience	.339	.47	.705	.482

Three factors were examined in this model, initial college experience, gender, and the interaction between gender and first college experience. None of these factors resulted in a statistically significant result. For initial college experience, $t = -.467$ ($df = 3, 87$) resulted in a p value of .641. For the factor of gender, $t = -.555$ ($df = 3, 87$), resulting in a p value of .58. For the interaction between gender and initial college experience, $t = 2.231$ ($df = 3, 87$), resulting in a p value of .028. This model did not predict TSES global scores. Tables 16-18 summarize the results of the regression analyses of the interaction between gender and initial college experience as it relates to the TSES factor scores.

Table 16

Student Engagement Scores Predicted from 1st College Experience and Gender

TSES Student Engagement Score (Model $R = .148$; $R\text{-square} = .022$; Adjusted $R\text{-square} = -.012$)

Source	<i>SS</i>	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Model	1.252	3	.417	.65	.585
Residual	55.110	87	.642		
Model	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	<i>p</i>
Intercept	8.165			5.107	.00
1 st College Experience	-.601		-.374	-.609	.544
Gender	-.419		-.172	-.503	.616
Gender x 1 st College Experience	.405		.522	.782	.436

Table 17

Instructional Strategies Scores Predicted from 1st College Experience and Gender

TSES Instructional Strategies Score (Model $R = .144$; $R\text{-square} = .021$; Adjusted $R\text{-square} = -.013$)

Source	<i>SS</i>	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Model	1.392	3	.464	.614	.608
Residual	65.789	87	.756		
Model	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	<i>p</i>
Intercept	7.847			4.522	.00
1 st College Experience	-.210		-.120	-.196	.845
Gender	-.301		-.114	-.333	.740
Gender x 1 st College Experience	.239		.284	.425	.672

Table 18

Classroom Management Scores Predicted from 1st College Experience and Gender

TSES Classroom Management Score (Model $R = .157$; $R\text{-square} = .025$; Adjusted $R\text{-square} = -.009$)					
Source	<i>SS</i>	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Model	1.471	3	.490	.736	.533
Residual	57.996	87	.667		
Model	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	<i>p</i>
Intercept	8.392			5.151	.00
1 st College Experience	-.473		-.289	-.471	.639
Gender	-.567		-.229	-.668	.506
Gender x 1 st College Experience	.373		.471	.707	.482

The results for the regression analyses on the factor scores predicted from the interaction between initial college experience and gender are reported in Tables 16-18. As with the global TSES scores, the interaction between gender and initial college experience was not a statistically significant predictor of any of the factor scores. For the factor of Student Engagement, $t=.782$ ($df=3, 87$) resulting in a p value of .436. For Instructional Strategies, $t=.425$ ($df=3, 87$) resulting in a p value of .672. Finally, for the factor of Classroom Management, $t=.707$ ($df=3, 87$) resulting in $p=.482$.

Ethnic Background and First College Experience

The mean global TSES scores and factor scores were calculated based on initial college experience and ethnic background. The results of these averages are located in Tables 19-22.

Table 19

*Mean TSES Global Scores (Standard Deviations in Parentheses) by Ethnicity
and 1st College Experience*

	<u>University 1st</u>	<u>Community College 1st</u>
African American	7.291 (.43)	7.854 (.80)
American/Alaskan Native	7.708 (.94)	n/a
Asian/Pacific Islander	7.93 (.86)	n/a
Caucasian	7.661 (.68)	7.694 (.73)
Hispanic	6.986 (.95)	7.948 (.61)
Total	7.536 (.76)	7.738 (.71)

Table 20

*Mean Student Engagement Scores (Standard Deviations in Parentheses) by Ethnicity
and 1st College Experience*

<u>Student Engagement Score</u>	<u>University 1st</u>	<u>Community College 1st</u>
African American	7.469 (.36)	7.563 (1.01)
American/Alaskan Native	7.813 (1.33)	n/a
Asian/Pacific Islander	7.625 (1.23)	n/a
Caucasian	7.632 (.77)	7.675 (.77)
Hispanic	7.111 (.93)	7.875 (.84)
Total	7.538 (.81)	7.684 (.78)

Table 21

Mean Instructional Strategies Scores (Standard Deviations in Parentheses) by Ethnicity and 1st College Experience

	<u>University 1st</u>	<u>Community College 1st</u>
African American	7.000 (.62)	7.875 (.80)
American/Alaskan Native	8.063 (.97)	n/a
Asian/Pacific Islander	7.833 (1.13)	n/a
Caucasian	7.704 (.75)	7.713 (.86)
Hispanic	6.806 (1.10)	7.938 (.51)
Total	7.519 (.89)	7.753 (.82)

Table 22

Mean Classroom Management Scores (Standard Deviations in Parentheses) by Ethnicity and 1st College Experience

	<u>University 1st</u>	<u>Community College 1st</u>
African American	7.406 (.52)	8.125 (.72)
American/Alaskan Native	7.250 (.53)	n/a
Asian/Pacific Islander	8.333 (.62)	n/a
Caucasian	7.646 (.71)	7.696 (.76)
Hispanic	7.042 (1.33)	8.031 (.58)
Total	7.550 (.86)	7.776 (.74)

After calculating the means, the variables of ethnic background and first college experience were entered into a multivariate analysis of variance (MANOVA) to predict TSES

global scores as well as scores for the factors of Student Engagement, Instructional Strategies and Classroom Management. Details of the MANOVA are listed in Tables 23-26.

Table 23

TSES Global Scores Analyzed by 1st College Experience and Ethnicity

TSES Global Score (eta-squared = .106)					
Source	SS	df	Mean Square	F	p
1 st College Experience	2.629	1	2.629	4.952	.029
Ethnicity	1.52	4	.380	.716	.584
Ethnicity x 1 st College Experience	2.316	2	1.158	2.181	.119
Total	6.465	7			
Error	44.073	83	.531		

Three factors were examined in this model, initial college experience, ethnic background, and the interaction between ethnic background and initial college experience. For initial college experience, $F=4.952$ resulting in a p value of .029, yielding a statistically significant result at $p<.05$. For the factor of ethnic background, $F=.716$ resulting in a p value of .584. For the interaction between ethnicity and initial college experience, $F=2.181$ resulting in a p value of .119. The interaction of the two predictor variables did not significantly predict TSES global scores. Tables 24-26 summarize the results of the regression analyses of the interaction between ethnic background and initial college experience as it relates to the TSES factor scores.

Table 24

Student Engagement Scores Analyzed by 1st College Experience and Ethnicity

TSES Student Engagement Score (eta-squared = .049)

Source	SS	df	Mean Square	F	p
1 st College Experience	.879	1	.879	1.343	.25
Ethnicity	.641	4	.160	.245	.912
Ethnicity x 1 st College Experience	1.234	2	.617	.944	.393
Total	2.754	7			
Error	54.285	83	.654		

Table 25

Instructional Strategies Scores Analyzed by 1st College Experience and Ethnicity

TSES Instructional Strategies Score (eta-squared = .137)

Source	SS	df	Mean Square	F	p
1 st College Experience	4.403	1	4.403	6.302	.014
Ethnicity	3.335	4	.834	1.194	.320
Ethnicity x 1 st College Experience	3.872	2	1.936	2.771	.068
Total	11.61	7			
Error	57.982	83	.699		

Table 26

Classroom Management Scores Analyzed by 1st College Experience and Ethnicity

TSES Classroom Management Score (eta-squared = .115)					
Source	<i>SS</i>	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
1 st College Experience	3.347	1	3.347	5.279	.024
Ethnicity	2.958	4	.739	1.166	.332
Ethnicity x 1 st College Experience	2.601	2	1.301	2.051	.135
Total	8.906	7			
Error	52.634	83	.634		

As indicated in tables 24-26, neither initial college experience, ethnic background or the interaction between ethnicity and initial college experience was a statistically significant predictor of the factor scores on the TSES. For the factor of Student Engagement, $F=.944$ resulting in a p value of .393. For Instructional Strategies, $F=2.771$ resulting in a p value of .068. Finally, for the factor of Classroom Management, $F=.135$ resulting in $p=.135$. These analyses did not show any statistically significant differences in TSES individual factors scores based on the interaction between ethnic background and initial college experience.

State Certification Level and First College Experience

The mean global TSES scores and factor scores were calculated based on initial college experience and level of state certification that the participant was seeking. The results of these averages are located in Tables 27-30.

Table 27

Mean TSES Global Scores (Standard Deviations in Parentheses) by Certification Level and 1st College Experience

	<u>University 1st</u>	<u>Community College 1st</u>
EC-4 th Grade	7.677 (.78)	7.741 (.72)
Grades 4-8	7.826 (.56)	7.851 (.64)
Grades 8-12	7.176 (.71)	6.833 (.65)
All Levels	7.449 (.78)	7.896 (.72)
Total	7.536 (.76)	7.738 (.71)

Table 28

Mean Student Engagement Scores (Standard Deviations in Parentheses) by Certification Level and 1st College Experience

	<u>University 1st</u>	<u>Community College 1st</u>
EC-4 th Grade	7.750 (.81)	7.728 (.78)
Grades 4-8	7.792 (.53)	7.911 (.70)
Grades 8-12	7.139 (.84)	6.250 (.71)
All Levels	7.397 (.82)	7.729 (.48)
Total	7.538 (.81)	7.684 (.78)

Table 29

Mean Instructional Strategies Scores (Standard Deviations in Parentheses) by Certification Level and 1st College Experience

	<u>University 1st</u>	<u>Community College 1st</u>
EC-4 th Grade	7.577 (1.04)	7.745 (.81)
Grades 4-8	8.125 (.50)	7.875 (.65)
Grades 8-12	7.194 (.70)	6.750 (.53)
All Levels	7.404 (.83)	7.979 (1.00)
Total	7.753 (.89)	7.617 (.82)

Table 30

Mean Classroom Management Scores (Standard Deviations in Parentheses) by Certification Level and 1st College Experience

	<u>University 1st</u>	<u>Community College 1st</u>
EC-4 th Grade	7.702 (.72)	7.750 (.73)
Grades 4-8	7.563 (.80)	7.768 (.82)
Grades 8-12	7.194 (1.05)	7.500 (.71)
All Levels	7.544 (.94)	7.979 (.83)
Total	7.550 (.86)	7.776 (.74)

Tables 27-30 summarize the averages of the groups' global and factor scores on the TSES.

Following those calculations, certification level and first college experience were entered into a

MANOVA to predict TSES global scores as well as scores for Student Engagement, Instructional Strategies and Classroom Management. Details of the MANOVA are listed in Tables 31-34.

Table 31

TSES Global Scores Analyzed by 1st College Experience and Certification Level

TSES Global Score (eta-squared = .101)					
Source	SS	df	Mean Square	F	p
1 st College Experience	.030	1	.030	.057	.812
Certification Level	3.330	3	1.110	2.080	.109
Cert. Level x 1 st College Experience	.885	3	.295	.553	.648
Total	4.245	7			
Error	44.299	83	.534		

Three factors were examined in this model, initial college experience, certification level, and the interaction between certification level and initial college experience. None of these variables positively predicted the global TSES scores. For initial college experience, $F=.057$ resulting in a p value of .812. For the factor of certification level, $F=2.080$ resulting in a p value of .109. For the interaction between ethnicity and initial college experience, $F=.553$ resulting in a p value of .648. Tables 32-34 summarize the results of the MANOVAs conducted for the TSES factor scores.

Table 32

Student Engagement Scores Analyzed by 1st College Experience and Certification Level

TSES Student Engagement Score (eta-squared = .142)

Source	<i>SS</i>	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
1 st College Experience	.171	1	.171	.289	.592
Certification Level	6.962	3	2.321	3.931	.011
Cert. Level x 1 st College Experience	1.832	3	.611	1.034	.382
Total	8.965	7			
Error	49.004	83	.590		

Table 33

Instructional Strategies Scores Analyzed by 1st College Experience and Certification Level

TSES Instructional Strategies Score (eta-squared = .105)

Source	<i>SS</i>	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
1 st College Experience	.002	1	.002	.003	.960
Certification Level	4.605	3	1.535	2.120	.104
Cert. Level x 1 st College Experience	1.897	3	.632	.873	.458
Total	6.504	7			
Error	60.094	83	.724		

Table 34

Classroom Management Scores Analyzed by 1st College Experience and Certification Level

TSES Classroom Management Score (eta-squared = .053)					
Source	SS	df	Mean Square	F	p
1 st College Experience	.798	1	.798	1.177	.281
Certification Level	.925	4	.308	.454	.715
Cert. Level x 1 st College Experience	.509	3	.170	.250	.861
Total	2.232	8			
Error	56.286	83	.678		

As indicated in tables 31-34, the interaction between certification level and initial college experience was not a statistically significant predictor of any of the factor scores on the TSES. For the factor of Student Engagement, $F=1.034$ resulting in a p value of .382. For Instructional Strategies $F=.873$ resulting in a p value of .458. Finally, for the factor of Classroom Management, $F=.250$ resulting in $p=.861$. These analyses did not show any statistically significant differences in TSES individual factors scores based on the interaction between ethnic background and initial college experience.

Number of Contact Hours and First College Experience

A final analysis was conducted to determine the effect that the number of hours a participant participated in during early field experiences had on TSES scores. Number of contact hours and first college experience were entered into a multiple regression model to predict TSES

global scores as well as scores for Student Engagement, Instructional Strategies and Classroom Management. Details of the regression model are listed in Tables 35-38.

Table 35

TSES Global Scores Predicted from 1st College Experience and Number of Contact Hours

TSES Global Score (Model $R = .235$; $R\text{-square} = .055$; Adjusted $R\text{-square} = .023$)					
Source	<i>SS</i>	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Model	2.733	3	.911	1.702	.173
Residual	46.567	87	.535		
Model	Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	<i>p</i>
Intercept	6.727			16.533	.00
1 st College Experience	.551		.369	2.072	.041
Contact Hours	.006		.660	1.842	.069
Contact Hours x 1 st College Experience	-.003		-.700	-1.718	.089

Three factors were examined in this model, initial college experience, number of early field experience contact hours, and the interaction between contact hours and first college experience. For initial college experience, $t=2.072$ ($df=3, 87$) resulted in a p value of .041, yielding a statistically significant result at $p<.05$. For the factor of gender, $t=1.842$ ($df=3, 87$), resulting in a p value of .069. For the interaction between gender and initial college experience, $t=-1.718$ ($df=3, 87$), resulting in a p value of .089. Tables 36-38 summarize the results of the regression analyses of the interaction between contact hours and initial college experience as it relates to the TSES factor scores.

Table 36

Student Engagement Scores Predicted from 1st College Experience and Contact Hours

TSES Student Engagement Score (Model $R = .215$; $R\text{-square} = .046$; Adjusted $R\text{-square} = .013$)

Source	<i>SS</i>	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Model	2.636	3	.879	1.403	.247
Residual	54.474	87	.626		
Model	Unstandardized		Standardized	<i>t</i>	<i>p</i>
	Coefficients		Coefficients		
Intercept	6.845			15.554	.00
1 st College Experience	.400		.249	1.392	.168
Contact Hours	.006		.582	1.616	.110
Contact Hours x 1 st College Experience	-.003		-.521	-1.273	.206

Table 37

Instructional Strategies Scores Predicted from 1st College Experience and Contact Hours

TSES Instructional Strategies Score (Model $R = .232$; $R\text{-square} = .054$; Adjusted $R\text{-square} = .021$)

Source	<i>SS</i>	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Model	3.603	3	1.201	1.644	.185
Residual	63.578	87	.731		
Model	Unstandardized		Standardized	<i>t</i>	<i>p</i>
	Coefficients		Coefficients		
Intercept	6.581			13.842	.00
1 st College Experience	.663		.381	2.134	.036
Contact Hours	.007		.646	1.801	.075
Contact Hours x 1 st College Experience	-.004		-.720	-1.766	.081

Table 38

Classroom Management Scores Predicted from 1st College Experience and Contact Hours

TSES Classroom Management Score (Model $R = .214$; $R\text{-square} = .046$; Adjusted $R\text{-square} = .013$)

Source	<i>SS</i>	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Model	2.722	3	.907	1.391	.251
Residual	56.745	87	.652		

Model	Unstandardized Coefficients	Standardized Coefficients	<i>t</i>	<i>p</i>
Intercept	6.754		15.038	.00
1 st College Experience	.591	.360	2.011	.047
Contact Hours	.006	.547	1.517	.133
Contact Hours x 1 st College Experience	-.003	-.637	-1.554	.124

The results for the regression analyses on the factor scores predicted from the interaction between initial college experience and number of contact hours are reported in Tables 36-38. As indicated in these tables, the interaction between first college experience and the number of contact hours a student had in early field experiences was not a statistically significant predictor of the scores on the TSES. For the factor of Student Engagement, $t=-1.273$ ($df=3, 87$) resulting in a p value of .206. For Instructional Strategies, $t=-1.766$ ($df=3, 87$) resulting in a p value of .081. Finally, for the factor of Classroom Management, $t=-1.554$ ($df=3, 87$) resulting in $p=.124$. The interaction between initial college experience and the number of early field experiences was not a statistically significant predictor of any of the factor scores or the global TSES scores.

CHAPTER 5

DISCUSSION AND RECOMMENDATIONS

As stated in chapter 1, the problem of the study was to determine if any statistically significant difference in self-efficacy could be found between preservice teachers who began their education at the community college and preservice teachers who began their education at the university. The participants in this study included 115 preservice teachers from the colleges of education at two large metropolitan universities in Texas. The study primarily used a quantitative approach and employed two instruments: a demographic questionnaire developed by the researcher and the Teachers' Sense of Efficacy Scale (Tschannen-Moran & Woolfolk Hoy, A., 2001). The demographic survey consisted of ten questions that asked for information about the participants, such as age, gender and ethnicity, as well as information about their prior educational backgrounds and early field experiences.

These two instruments were administered at the student teacher orientations held at each college of education. The orientations occurred just prior to the preservice teachers being released to their student teaching assignments.

Research Questions

Research Question 1

Research Question 1 asked, "What is the difference in scores on the Teachers' Sense of Efficacy Scale (TSES) (Tschannen-Moran & Woolfolk Hoy, A., 2001) between the group of students seeking teacher certification who began at the university level and those who began at a community college?" Data included 99 of the 115 respondents that were retained after the pattern of education groups was established and 16 participants with educational backgrounds unlike the others were eliminated. The following two comparison groups were established: 1)

those indicating that a university had been their first higher educational experience ($n=57$) and 2) those indicating that a community college had been their first higher educational experience ($n=42$).

The University group mean on the TSES was 7.54 with a standard deviation of .76 and the Community College group mean on the same measure of self-efficacy was 7.74 with a standard deviation of .71. A regression analysis was conducted which revealed that initial college experience was not a statistically significant predictor of the composite TSES scores or of any of the three individual factor scores: Student Engagement, Instructional Strategies, and Classroom Management. The results of this study would indicate that preservice teachers, regardless of their initial college experiences, felt similarly confident in their teaching abilities.

Research Question 2

Research Question 2 asked, “How much of this difference exists as a result of other factors such as age, gender, ethnicity, certification level, and the number of hours spent by the participant in early field experiences in K-12 classrooms?”

The other variables listed above were tested for effects that could potentially interact with the relationship between initial college experience and the scores on the TSES. In this model, there was a positive relationship between age and initial college experience on the global TSES scores, $p=.046$. In addition, the scores on the subscale of Instructional Strategies were also positively related to the interaction between age and initial college experience, $p=.034$. While this finding is statistically significant, the value of $R^2=.087$, indicating that only about 9% of the variance in the global TSES scores could be attributed to the interaction between age and initial college experience. This result is too small to warrant looking at age as a reliable indicator of future teacher success.

A multiple regression analysis was conducted to determine if gender could predict the global scores on the TSES or the scores on the three subscales. This model did not predict any statistically significant relationship between gender and the global TSES scores or the individual factor scores. The lack of finding in this area could be due to the lack of diversity among the participants. Although the subjects in this study are similar to the make-up of the teaching profession, the small number of male participants could have prevented any statistically significant findings in this area. Only 13.9% ($n=16$) of the total respondents were male. If the study's participants had been more evenly distributed between the two genders, results from this analysis might have been more insightful.

A multiple regression model was also used to determine if any statistically significant relationship existed between the number of hours in early field experiences that a preservice teacher had attained and global and factor scores on the TSES and the interaction between those variables and initial college experience. There were no statistically significant relationships found among these variables.

Finally, MANOVAs were conducted for the variables of ethnic background and intended state certification level. These two models did not indicate any statistically significant differences in TSES global scores or scores on the individual factors among preservice teachers of different ethnicities or different levels of certification. As with the gender, the participants in this study were not very diverse. Seventy-one percent ($n=82$) of respondents were Caucasian and the low numbers in the other ethnic background categories could have prevented accurate analysis of those groups. When looking at certification levels, each certification level was represented, with EC-4 being the most widely represented with 57 participants. This sample shows that there was no statistically significant difference between the global or factor scores on

the TSES based on initial college experience and the certification level the participant was seeking.

Concerns of the Study

Certain limitations regarding this study make generalizability a concern. The original proposal for this study indicated the intent to include preservice teachers from three large, metropolitan universities in Texas. However, the college of education at one of the universities chose not to participate. IRB approval deadlines prevented the researcher from seeking participation from another university.

A secondary concern is that the study specifically targeted students enrolled in public colleges of education. This study did not address students at private institutions of higher education.

Finally, an inherent concern with this study is the self-reporting that occurred on both of the instruments. The researcher must trust that the demographic survey and the Teachers' Sense of Efficacy Scale were completed accurately and honestly by the participants.

Implications of the Study

The sample in this study would indicate the assurance that candidates from community colleges feel just as capable of being effective teachers as preservice teachers who entered the university after high school. By 2010, estimates indicate that between 2 and 2.5 million more K-12 teachers will be needed in the United States (Townsend and Ignash, 2003). The community colleges will see many of these future teachers come through their programs. For school districts, as well as traditional teacher preparation programs, this study offers hope that, regardless of their initial college experiences, preservice teachers feel equally confident in their abilities to be effective teachers.

Recommendations for Future Research

In the original proposal for this study, student teachers at three colleges of education were targeted for inclusion. This would have increased the number of participants in the study. Replication of this study to include significantly more preservice teachers would be helpful in determining generalizability of the study.

Since the results of this study showed a small positive relationship between age, initial college experience, the interaction between those two variables, and the global scores on the TSES and the scores on the factor of Instructional Strategies, it would be beneficial to conduct further studies to determine at what age the greatest gains are seen. If age does then become the most important factor in determining self-efficacy, an interesting implication for preparation programs would be to target those individuals with more life experience. In addition, since age was shown to be a factor in determining self-efficacy, this study should be replicated with initial certification post-baccalaureate student teachers.

Finally, since both colleges in this study are located in the state of Texas, it would be beneficial to replicate this study in more states to determine if findings are similar. Comparisons among preservice teachers in different areas of the country would give greater insight into the efficacy levels of teacher candidates.

Summary

Examining the numbers of teachers that will be needed in our nation over the next five years can prove daunting for those in the profession of education. In the 1999-2000 school year, 58% of all schools surveyed reported having difficulties filling one or more teaching jobs in one or more fields (Ingersoll, 2003). In addition to considering the sheer quantity of teachers that this will require, there is the need to ensure quality for all of America's schoolchildren. Efficacy

is one way to measure the potential for effective teaching. The sample in this study indicates that a preservice teacher's efficacy is not linked to his or her initial college experience. University students, as well as community college students, show similar scores on a particular measure of self-efficacy. This is encouraging news since large numbers of preservice teachers are beginning their education at the community college. It will be imperative to tap into the potential supply of teacher candidates at the community college level as well as to encourage those institutions to recruit for the profession. The challenge for those who prepare tomorrow's teachers will be to work together at the community college and university levels to ensure quality programs and recruit and train the most qualified teacher candidates.

APPENDIX
DEMOGRAPHIC DATA SHEET

Demographic Data Sheet

Please answer every question to the best of your ability.

1. What is your age? _____
2. Gender: Male Female
3. Ethnicity: African-American American Indian/Alaskan Native Asian/Pacific Islander
 Caucasian Hispanic Other
4. Are you a first generation college student? Yes No
5. What was the pattern of your education?
 _____ A. high school → University
 _____ B. high school → Community College → University
 _____ C. high school → University → Community College → University
 _____ D. high school → University A → University B
 _____ E. high school → Community College A → Community College B → University
 _____ F. other (please explain) _____
6. If community college was your first college experience, how many credit hours did you complete while a student there? _____
7. What was your G.P.A. at the conclusion of your first 60 hours of college work? _____
8. What level of teacher certification do you intend to attain?
 Grades EC-4 Grades 4-8 Grades 8-12 All Level
9. How many contact hours have you had in Pre-K-12 classrooms during your preparation for student teaching? _____
10. How many of these hours did you spend as an active participant in the classroom? _____

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