SELF-EFFICACY OF TRADITIONAL AND NON-TRADITIONAL CERTIFIED CAREER AND TECHNICAL EDUCATION TEACHERS

by

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(Under the Direction of Clifton L. Smith)

ABSTRACT

The purpose of this causal-comparative study was to compare participants certified through two post-baccalaureate career and technical education (CTE) teacher preparation programs (traditional and non-traditional) in terms of the teacher self-efficacy dimensions of student engagement, instructional strategies, and classroom management. These three variables were assessed using the Teachers' Sense of Efficacy scale - long form (TSES; Tschannen-Moran & Woolfolk Hoy, 2001). The TSES is based on Bandura's (1977a, 1977b) theory of self-efficacy and cognitive social learning theory. The impact of years of teaching experience as an independent variable on teacher self-efficacy was examined.

Invitation to participate in the study was extended through email invitations with a hyperlink to an online questionnaire. While 99 of the 144 invitations to participate in the study responded to the study, the attrition rate of 16 CTE teachers and one undergraduate teacher excluded 17 of the responses resulting in a 56.9% response rate. A total of 47 non-traditional program and 35 traditional program teachers that completed certification coursework during the same 5-year period answered the TSES scale.

The majority of both certification program (non-traditional and traditional) participants were females certified in business education with similar mean ages of 38 and 37 respectively and similar mean years of teaching experience of 4.66 and 4.09 respectively. Using ratings for the three Teachers' Sense of Efficacy (TSES) subscales, means and standard deviations were calculated. An alpha level of .05 was used for all statistical tests. Three two-way analysis of variance found no significant difference between the interaction of program type and years of teaching experience and the three teacher efficacy subscales. Since these interactions were not significant both of the main effects were interpreted separately. The main effect for years of teaching experience (0-3 and 4+ years) was not statistically significant on all three subscales. The main effect for program type (traditional and non-traditional) was also not statistically significant on the three teacher efficacy subscales.

INDEX WORDS: Self-Efficacy, Teacher-Efficacy, Teacher Preparation, Traditional Certification, Non-Traditional Certification, Student Engagement, Instructional Strategies, Classroom Management, Teaching Experience, Career and Technical Education (CTE)

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DEDICATION

This study is dedicated to my family;

to my parents, Joe and Sandra Johnson, for their selfless acts of love and kindness during this lengthy process. The countless hours of playing with the boys, meals you prepared for us, and help you provided that kept my household running are so appreciated. Most of all thank you for your certainty that I would complete this dissertation,

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CHAPTER I

INTRODUCTION

Teacher quality is an area of concern in education. *A Nation at Risk: The Imperative for Educational Reform* (1983) sparked many local, state, and national school reform efforts after reporting that "the educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a Nation and a people" (p. 5). In response to the A Nation At Risk report, President George H.W. Bush and many governors created The National Education Goals Report: Building a Nation of Learners (1991). They identified three main challenges faced by schools in the United States: teacher quality, high standards, and accountability.

In 2002, The No Child Left Behind Act was signed into law. This called for a highly qualified teacher in every classroom, the intent being to increase academic achievement through replacing non-certified provisional or emergency certificate holding teachers with those fully certified through an approved teaching program. In an effort to produce quality teachers, questions began to arise as to where these teachers would come from and how they could be fully certified.

Universities and colleges of education must focus on how best to attract and train qualified teachers. Within this quest, questions arise as to the definition of quality. The Georgia Professional Standards Commission (n. d.) defines a highly qualified teacher as one who "holds a bachelor's degree or higher, has a major in the subject area or has passed the state teacher content assessment, and is assigned to teach his/her major

subject(s)" (p. 1). A veteran teacher is defined as "one who has had three or more years of successful teaching experience" (p. 1).

In 2005, the Georgia Committee on Quality Teaching (CQT) further defined superior instruction by adopting a statewide definition of quality teaching called the Georgia Framework for Teaching. This framework was developed by partners of the Georgia Systemic Teacher Education Program (GSTEP) from extensive focus groups across the state of Georgia. The framework, shown in Appendix A, "identifies knowledge, skills, dispositions, understandings, and other attributes of accomplished teaching. The six domains and associated indicators provide common language and definitions for all stakeholders who are interested in quality teaching" (Georgia Committee on Quality Teaching, 2005, p. 4). The Georgia Department of Education, Board of Regents, Professional Standards Commission, and over 20 professional organizations look to this framework as the bridge to quality teaching (2005).

The University of Georgia College of Education Assessment Task Force developed a Framework for Educators in 2007 that encompasses the Georgia Framework for Teaching principles to expand the framework to cover not only those teaching grades P-12, but also those that support teachers as well stating that “the Task Force members created this potential umbrella document to define what all accomplished educators (defined as certified school and district personnel) do to improve and support teaching and learning” (p. 1). The Georgia Framework for Educators defines quality teaching as supporting and improving teaching and learning through the following six areas: Content and Curriculum, Knowledge of Students, Learning Environments, Assessment, Planning and Instruction, and Professionalism.

The seven principles of the Georgia Framework for Educators (2007) are used as the center of the assessment of teacher candidates in all certification programs at the University of Georgia College of Education. They are as follows:

> 1. Process: Learning to work in an educational setting is a career-long process of growth.
>
> 2. Support: Multi-layered support and continued professional development for all educators involve various participants (e.g., school, district, community).
>
> 3. Ownership: Each educator designs his or her own career path.
>
> 4. Impact: Effective work in an educational setting yields evidence of student learning and achievement.
>
> 5. Equity: All students and educators deserve high expectations and strong support to achieve their best.
>
> 6. Dispositions: Positive and productive dispositions, attitudes, and temperament have an important impact on student growth, educator growth, and school climate.
>
> 7. Technology: Technology facilitates teaching, learning, community building, resource acquisition, and school improvement. (p. 1)

The Georgia Framework for Educators (2007) is organized around six areas similar to the bridge framework. All teaching candidates in all certification programs are evaluated based in the following areas:

> 1. Content and Curriculum: Educators demonstrate a strong knowledge of content area(s) appropriate for their certification levels.

2. Knowledge of Learners: Educators support the intellectual, social, physical, and personal development of all learners.

3. Learning Environments: Educators create learning environments that encourage positive social interaction, active engagement in learning, and self-motivation.

4. Assessment: Educators understand and use a range of formal and informal assessment strategies to evaluate and ensure the continuous development of all learners.

5. Planning and Instruction: Educators design and create instructional experiences based on their knowledge of content standards, curriculum, learners, learning environments, and assessment date.

6. Professionalism: Educators recognize, participate and contribute to education as a profession. (p.1)

While student achievement through quality teaching is the ultimate goal of education reform, Strunk and Robinson (2006) comment that the attention has focused on "the shortage of qualified teachers to staff the nation's elementary and secondary classrooms" (p. 65). Non-traditional certification paths have become a path to fill school vacancies with quality teachers. With a strengthened focus on defining quality teaching, debates have emerged questioning if the type of program (i.e.: traditional or non-traditional certification) make a difference in the quality of the teacher. Furthermore, do personal teacher characteristics and experiences such as age, gender, or years of teaching experience have any bearing on teacher quality?

Teacher reform efforts seeking to answer questions such as these have prompted much research on the general teacher preparation and certification process. Career and Technical Education is experiencing similar issues regarding recruiting teachers while also wanting to strengthen teacher quality (Ruhland & Bremer, 2002). One theory proposed in the research is that quality teaching is positively correlated to teachers' sense of efficacy (Tschannen-Moran & Woolfolk Hoy, 2001). Teacher efficacy is defined as a teacher's "judgment of his or her capabilities to bring about desired outcomes of student engagement and learning, even among those students who may be difficult or unmotivated" (2001, p. 783). Studies have shown that new teachers with high self-efficacy ratings in their teaching ability also reported that the quality of their certification program was high while those educators with lower self-efficacy ratings reported less satisfaction with the support from their teaching preparation program (Burley, Hall, Villeme, & Brockmeier, 1991; Hall, Burley, Villeme, & Brockmeier, 1992; Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998).

Three evidences of teacher efficacy associated with quality teaching in the literature are efficacy in student engagement, efficacy in instructional strategies, and efficacy in classroom management (Tschannen-Moran et al., 1998). Student engagement is a "student's willingness, need, desire and compulsion to participate in, and be successful in, the learning process" (Bomia, Beluzo, Demeester, Elander, Johnson, & Sheldon, 1997, p. 294). Traits of student engagement are students' being interested in the topics taught, persisting even when presented with challenges and obstacles, and taking joy in accomplishing their schoolwork (Schlecty, 1994). Instructional strategy refers to the plan a teacher creates to achieve learning objectives from their students and methods

of teaching the content of the lesson. Classroom management involves the design and placement of classroom space and creating routines that manage behavior in order to promote classroom student learning. Creating a positive classroom environment, establishing standards for student behavior, and implementing effective routines are all encompassed within classroom management (Wong, 1998).

Wong (1998) stresses that the three main characteristics of an effective teacher are classroom management skills, teaching for lesson mastery, and positive student engagement. These three areas mirror the three subsets of teacher efficacy that Tschannen-Moran et al. (1998) associated with quality teaching. These three effects of teacher efficacy are also integrated throughout the Georgia Framework for Educators (2007) as indicators of quality teaching. Student engagement is in alignment with the Georgia Framework for Educators guidelines within the content and curriculum, knowledge of students, learning environments, and professionalism sections. The framework also has indicators of instructional strategy guidelines within the content and curriculum, assessment, planning and instruction areas. Classroom management is addressed within the Georgia Framework for Educators in the learning environments as well as planning and instruction sections.

Teacher efficacy factors and teacher quality indicators appear to be intertwined. The three subsets of teacher efficacy; student engagement, instructional strategy, and classroom management (Tschannen-Moran et al., 1998) are woven throughout the Georgia Framework for Educators (2007) as indicators of quality teaching and they are identified by leading teacher trainers as important quality teaching indicators (Tschannen-Moran et al., 1998; Wong, 1998). Teacher efficacy has consistently been found to be

associated with teacher performance in relation to increased student achievement (Armor, Conroy-Osefuera, Cox, King, McDonnell, Pascal, Pauly, & Zellman, 1976; Ashton & Webb, 1986; McLaughlin & Marsh, 1978; Moore & Esselman, 1992; Ross, 1992), increased student motivation (Midgley, Feldlaufer, & Eccles, 1989), and increased commitment to teaching (Burley et al., 1991; Coladarci, 1992).

There is an immediate need for qualified CTE teachers (Brand, 2008). One way CTE teacher preparation programs can improve the quality of teachers is to identify variables that influence teacher efficacy in relation to issues specific to Career and Technical Education. This study will provide a comparison of CTE teaching efficacy scores from traditional and non-traditional preparation programs at the University of Georgia. Tschannen-Moran et al. (1998) claim that "once efficacy beliefs are established, they appear to be somewhat resistant to change" (p. 235). Therefore, the time to most impact a prospective teacher's sense of efficacy is during their certification process and first three years of teaching, before they become a veteran teacher and establish judgment in their ability to reach and teach all students (1998).

For those persons wanting to teach with work experience or a degree in a field outside of education, a non-traditional certification program is a means to earn state teaching licensure. Teacher certification is an entity separate from other post-secondary degrees, therefore many persons in industry who want to teach often find the requirements necessary for traditional certification too strict in respect to benefits received and turn to non-traditional certification programs. Bradshaw (1998) defines alternative certification as “a method of entry into the teaching profession that does not require completion of a traditional teacher education program” (p. 4).

Georgia Professional Standards Commission provides state sponsored non-traditional programs, but also allows universities and colleges to provide similar programs. One such program that is part of the population for this study is the University of Georgia Preparation Academy for Career and Technical Educators (2008):

> The Preparation Academy for Career and Technical Educators (PACTE) is a new teacher institute, designed to train, and retain highly skilled mid-career professionals, who seek to enter into the career and technical education teaching profession and have been employed by a local school district. This program is designed for all certification areas in CTE: Agriculture Education, Business Education, Family and Consumer Science, Healthcare Sciences, Marketing Education, Technology Education, and Trade and Industrial Education.
>
> This program includes an intensive summer experience, monthly induction seminars focused on continued professional development, school-based mentoring, on-line support, as well as coaching and mentoring support through a supervised year-long teaching internship. (p. 1)

The first cohort of PACTE interns took place during the 2000-2001 school year. The goals of The University of Georgia Department of Workforce Education CTE teacher certification programs are to assist the State of Georgia in filling vacant CTE positions with qualified teachers, and to improve CTE teacher retention (Preparation Academy for Career and Technical Educators, 2008). Since the PACTE participants are teacher interns, the program satisfies a need to quickly fill vacant CTE positions without having to wait for recruited teacher candidates to fully complete the teaching certificate prior to serving in a Georgia school. The second goal, increasing commitment to

teaching and thereby producing quality CTE teachers, is a challenging one. According to Wonacott (2002):

> The challenge of beginning to teach may be particularly great for new CTE teachers. Changing legislation, philosophy, policies, and practices have resulted in dramatic shifts in the skills CTE teachers need. In addition to specific occupational skills, CTE teachers needs skills in meeting the needs of special populations, integrating academic and occupational instruction, coordinating school and work-based learning, managing work-based programs, and preparing students for both the workplace and post-secondary education. Furthermore, many CTE teachers enter teaching through alternative certification pathways—yet evidence clearly links full teacher preparation and licensure, as provided in traditional teacher education programs, with improved student outcomes. (p. 1)

Tschannen-Moran and Woolfolk Hoy (2001) suggest that "if the significant effects of teachers' beliefs in their capabilities were taken seriously, it could provoke significant changes in the way teachers were prepared and supported in their early years in the profession" (p. 802). Further research is warranted in order to identify similarities and differences of CTE teacher efficacy among traditional and non-traditional trained teachers, as teacher efficacy is an indicator of quality teaching.

Purpose of Study

The purpose of this causal-comparative study was to compare participants certified through two post-baccalaureate career and technical education (CTE) teacher preparation programs (traditional and non-traditional) in terms of the teacher self-efficacy dimensions of student engagement, instructional strategies, and classroom management.

These three variables were assessed using the Teachers' Sense of Efficacy scale - long form (TSES; Tschannen-Moran & Woolfolk Hoy, 2001). The TSES is based on Bandura's (1977a, 1977b) theory of self-efficacy and cognitive social learning theory. The impact of years of teaching experience as an independent variable on teacher self-efficacy was examined. Results of this study may add to the existing body of research on self-efficacy, particularly with respect to the teacher efficacy of certified CTE teachers. It also will help to inform CTE teacher preparation practices.

Research Objectives

The specific objectives to be addressed in this study were:

1. To describe teachers who have completed either the traditional or non-traditional post-baccalaureate CTE teacher preparation programs at UGA in terms of age, gender, ethnicity, certification field, and years of teaching experience.
2. To compare the levels of teacher's sense of efficacy subscale areas of student engagement, instructional strategies, and classroom management among teachers who have completed these post-baccalaureate teacher preparation programs (traditional and non-traditional).
3 To compare teachers completing these post-baccalaureate teacher preparation programs (traditional and non-traditional) by years of teaching experience on the teacher's sense of efficacy subscale areas of student engagement, instructional strategies, and classroom management.

Theoretical Framework

The theoretical framework that drives this study is the theory of self-efficacy, a theory evolved from Bandura's social cognitive theory (1977b). Self-efficacy theory

claims that a person's behavior is based upon two distinct factors: outcome expectation and efficacy expectation. Bandura (1977a) identified four major sources of information used by individuals when forming self-efficacy expectations: performance accomplishments, vicarious experience, verbal/social persuasion, and psychological state/emotional arousal.

The scale selected for this study, Teachers' Sense of Efficacy Scale (Tschannen-Moran & Woolfolk Hoy, 2001), was based on the model of the cyclical nature of teacher efficacy, a cognitive progression of Bandura's self-efficacy theory sources of efficacy information: verbal persuasion, vicarious experiences, physiological arousal, and mastery experiences. The teacher then analyzes the teaching tasks and assesses his or her personal teaching competencies. This processing determines the teacher's level of teaching efficacy in the situation. Teacher efficacy determines consequences (i.e., goals, efforts and persistence) which lead to performance. The model is cyclical "the performances and outcomes create a new mastery experience, which provides new information that will be processed to shape future efficacy beliefs" (Woolfolk Hoy & Davis, 2006, p. 119).

Teacher efficacy has consistently been found to be associated with teacher quality in numerous studies, including those of increased student achievement (Armor et al., 1976; Ashton & Webb, 1986; McLaughlin & Marsh, 1978; Moore & Esselman, 1992; Ross, 1992), student motivation (Midgley et al., 1989), increased commitment to teaching (Burley et al., 1991; Coladarci, 1992), lower teacher stress (Greenwood, Olejnik, & Parkay, 1990), increased classroom management skills (Woolfolk, Rosoff, & Hoy, 1990), promotion of student engagement (Ashton & Webb, 1986) and providing consistent

innovative instructional strategies (Berman, McLaughlin, Bass, Pauly, & Zellman, 1977; Cousins & Walker, 2000; Guskey, 1988; Stein &Wang, 1988).

Teachers with high efficacy show indicators of quality teaching as they are less likely to criticize students who make mistakes (Ashton & Webb, 1986), are more likely to spend extra time working with students who are struggling in their class (Gibson & Dembo, 1984) and are also less likely to refer students with lower socioeconomic status and students with difficult behavior for special services (Meijer & Foster, 1988; Podell & Soodak, 1993; Tschannen-Moran et al., 1998).

The literature reveals that self-efficacious teachers work harder, persist longer, persevere in the face of adversity, have greater optimism, lower anxiety, and achieve more than those who lack this belief in their own teaching capabilities (Bandura, 1997). According to self-efficacy theory, if teacher trainers can learn how to increase prospective educators' sense of self-efficacy judgments about their abilities to complete teaching related tasks, the result would lead to improved quality teaching performance and thus improved student achievement.

Significance of the Study

In order to better prepare career and technical education teachers, this study sought to determine to what extent there is a difference in perceived teachers' sense of efficacy along the dimensions of efficacy in student engagement, efficacy in instructional strategies, and efficacy in classroom management between traditional and non-traditional trained CTE teachers.

The theoretical significance of this study is to add to the body of literature research on the examination of teachers' sense of efficacy of teachers that were trained

through two different University CTE preparation programs: traditional and non-traditional. Review of the literature surrounding teacher efficacy revealed many studies regarding teacher efficacy and general teacher preparation (Coladarci, 1992; Feistritzer, 2007b; Guskey, 1987; Guyton, Fox, & Sisk, 1991; Haberman, 1994; Hawk & Schmidt, 1989; Houston, Marshall, & McDavid, 1993; Murshidi, Konting, Elias, & Fooi, 2006; Tschannen-Moran & Woolfolk Hoy, 2007; Woolfolk & Hoy, 1990; Woolfolk Hoy & Davis, 2006). Review of the literature showed that there was little research relating to the teachers' sense of efficacy and its relationship to career and technical education preparation programs (Harms & Knobloch, 2005, Moran, 2005).

This study is of practical significance to (a) post-secondary programs seeking to certify CTE teachers, (b) those interested in pursuing CTE certification, and (c) researchers that seek to further ways to produce more efficacious CTE teachers that are committed to teacher quality.

This research could help career and technical education preparation programs gain insight into the relationship between teachers' sense of efficacy and certification preparation strategies. These insights could provide information for these programs as they seek strategies to better prepare future career and technical educators who are not only prepared to teach through the completion of an approved certification program, but with strengthened teacher efficacy, also perceive themselves as able to teach.

The results of this study could potentially indicate the need for more focus to be placed on non-traditional programs as a source for recruiting diverse candidates from industry to become career and technical teachers (Feistritzer, 2007b; Ruhland & Bremer, 2004). Also, this research may equip teacher trainers to better serve those who are

entering their traditional and non-traditional programs. If this study finds that traditional or non-traditional certified teachers have a higher teacher efficacy, program developers may seek to counter these effects in ways to promote a higher efficacy to alleviate the difference.

CHAPTER II

REVIEW OF LITERATURE

This chapter represents a review of the literature related to teacher preparation, certification, and efficacy. Major topics include teacher preparation and certification across the Nation, Georgia teacher preparation and certification, effectiveness of traditional and non-traditional certified teachers, description of variables influencing the decision to enter traditional and alternative teacher education programs, Bandura's self-efficacy theory and the development of the teacher efficacy construct, measures of teacher efficacy, and independent variables that may influence teachers' sense of efficacy.

Teacher Preparation and Certification Across the Nation

Veteran teachers, defined as teachers with three or more years of teaching experience, may further their credentials and obtain national board certification, however there is no national uniform requirement for initial teacher licensure (National Board for Professional Teaching Standards, 2007). States are given authority to determine these standards and they are the only "entity that can issue licenses or certificates to teach or grant licensing authority...and, in order to teach in public schools in the United States, one has to have a license in the state in which one is teaching" (Feistritzer, 2005a, n. p.). While different rules and regulations exist from state to state, traditional certification programs tend to be held at universities or colleges in undergraduate degree settings.

Alternative education has also become a nationwide option for teacher certification. Feistritzer and Chester (2002) report that more states have been giving the

option of alternative teacher certification to fill teacher vacancies. In a National Center for Alternative Certification (NCAC) report entitled *Alternative Teacher Certification: A State-by-State Analysis 2006*, Feistritzer commented on changes in the nature of alternative certification "what began in the early 1980s as a way to ward off projected shortages of teachers and replace emergency certification has evolved into a sophisticated model for recruiting, training, and certifying people who already have at least a bachelor's degree and want to become teachers" (p. 1). The report also stated that as of 2006, 48 states and the District of Columbia offered alternatives to going back to college and majoring in education in order to become a teacher. In fact, within the 48 states 124 different alternative routes to teacher certification exist at 619 site locations. This compares with 40 states in 2000, and only eight in 1983. In the year 2005 alone 81 additional alternate route programs were created (2006).

Traditional Career and Technical Teacher Certification

While states do not have one set standard of teaching certification, many traditional programs are quite similar. A typical traditional Career and Technical Education (CTE) certification program from a state approved university or college is a four year program of study (Walter & Grey, 2002). Although career and technical certification fields vary, the paths within the core curriculum of the CTE degree requirement tend to be similar. The first two years of study typically include general liberal arts courses. The student then requests formal approval for admission to a teacher education program. Once accepted into the specific certification field teacher education program the student takes courses in teaching pedagogy, certification field specific courses of study, and then supervised field experiences; typically school observations,

then student teaching (Bruening, Scanlon, Hodes, Dhital, Shao, & Liu, 2001). While the actual test varies, states typically require the passing of a standardized assessment prior to granting teacher certification licensure (Lilly, 1992).

Alternative Career and Technical Teacher Certification

Nationwide alternative education programs are all but typical. There are currently 124 alternative routes to teacher certification (Feistritzer, 2006). Many researchers (Blair, 2003; Feistritzer, 2006; Roach & Cohen, 2002) suggest that while these programs are each different, they often share similar characteristics as cited in Moran (2005):

> Typically state and district run programs are internship type programs that: (a) require a bachelor's degree in the subject area to be taught; (b) require the candidate to meet established screening criteria (e.g. grade point average minimum, demonstration of content knowledge, experience, test scores, etc.); (c) provide some level of pre-service preparation; (d) provide professional instruction while the candidate teaches full time under a provisional license; (e) provide mentoring; (f) require ongoing class work; (g) last 1 to 2 years; and, (h) require assessment of candidate performance prior to full licensure. (p. 22)

In order to be able to consistently report and analyze alternative teacher certification data, the National Center for Education Information developed the following classification system. This system categorizes the various state alternative routes for certifying teachers (Feistritzer & Chester, 1991). The 1991 system "included items labeled A through I and has since added J and K, to further distinguish among routes that states have identified as alternatives to traditional certification" (Feistritzer, 2007a, n. p.).

The classification of state alternative routes currently posted by Feistritzer on the National Center for Education website (Feistritzer, 2007c) is as follows:

1. CLASS A: Alternative teacher certification routes designed for the explicit purpose of attracting talented individuals who already have at least a bachelor's degree in a field other than education into elementary and secondary school teaching. It is not restricted to shortages, secondary grade levels or subject areas. This certification route involves teaching with a trained mentor and any formal instruction that deals with the theory and practice of teaching during the school year -- and sometimes in the summer before and/or after.

2. CLASS B: Teacher certification routes that have been designed specifically to bring talented individuals who already have at least a bachelor's degree into teaching. These routes involve specially designed mentoring and some formal instruction. However, these routes either restrict the route to shortages and/or secondary grade levels and/or subject areas.

3: CLASS C: These routes entail review of academic and professional background, and transcript analysis of the candidate. They involve specially (individually) designed in-service and course-taking necessary to reach competencies required for certification, if applicable. The state and/or local school district have major responsibility for program design.

4. CLASS D: These routes entail review of academic and professional background, and transcript analysis. They involve specially (individually) designed in-service and course-taking necessary to reach competencies required for certification, if applicable. An institution of higher education has major responsibility for program design.

5. CLASS E: These post-baccalaureate programs are based at an institution of higher education.

6. CLASS F: These programs are basically emergency routes. The prospective teacher is issued some type of emergency certificate or waiver which allows the individual to teach, usually without any on-site support or supervision, while taking the traditional teacher education courses requisite for full certification.

7. CLASS G: Programs in this class are for persons who have few requirements left to fulfill before becoming certified through the traditional approved college teacher education program route, e. g., persons certified in one state moving to another; or persons certified in one endorsement area seeking to become certified in another.

8. CLASS H: This class includes those routes that enable a person who has some "special" qualifications, such as a well-known author or Nobel prize winner, to teach certain subjects.

9. CLASS I: These states reported that they were not implementing alternatives to the approved college teacher education program route for licensing teachers.

10. CLASS J: These programs are designed to eliminate emergency routes. They prepare individuals who do not meet basic requirements to become qualified to enter an alternate route or a traditional route for teacher licensing.

11. CLASS K: These avenues to certification accommodate specific populations for teaching, e.g., Teach for America, Troops to Teachers and college professors who want to teach in K-12 schools. (n. p.)

The classification of the alternative programs led to a grant, issued to establish the www.teach-now.org webpage providing a "one-stop source of information about alternative routes to teacher certification" (Feistritzer, 2007b, n. p.).

National Characteristics of Alternative Certification Programs

According to Feistritzer (2006) the length of alternative teacher certification programs can range from less than one year to three years. The data from the National Center for Education Information report entitled *Profile of Alternative Route Teachers* (Feistritzer, 2005c) show that 52% of participants complete their alternative program within two years, 32% in one year, 12% in three years, and 4% in less than one year.

Entities with primary responsibility for administering the alternative teacher certification programs also vary across the nation. Data shows that 50% of alternative teacher certification programs are conducted within a college or university, 21% through local school districts, 6% by regional service centers, 5% through the State department, 4% through consortium, 2% through community college, and 12% are conducted at other undisclosed entities (Feistritzer, 2005c).

The number of teachers certified through alternative programs has increased. Alternative programs produced 35,000 graduates in 2005 (Feistritzer, 2005c). Entry requirements across the nation for alternative programs contain variations of the following components: 98% require a bachelor's degree, 71% have a minimum GPA entry requirement, 66% require applicants to take a basic skills test, 65% interview applicants, 59% require background check, and 55% require a subject test. Other entry requirements can include semester hours (24%), US citizenship (24%), passing score on a

English proficiency test (22%), require a specific academic major (21%), minimum GRE score (13%), pedagogy test (12%), ACT requirement (4%), and SAT requirement (4%).

Nationally, data shows that while requirements may vary, programs are requiring student activities such as attendance of a summer orientation (53%), mentoring (83%), college courses to be taken on campus (61%), college courses to be taken at the teaching site (12%), offering college courses that can be taken online (18%), district courses (19%), seminar attendance (52%), peer review (21%), and 42% of programs have other requirements exclusive to their program (Feistritzer, 2005c).

Programs can differ nationally regarding the alternative teacher program participant evaluators. School principals are the main evaluators nationwide (81%), followed by university or college personnel (67%), mentor teacher (67%), and state agency personnel (7%). Thirty-seven percent report that "other" unidentified persons perform the evaluations (Feistritzer, 2005c).

The data shows that most alternatively certified teachers are satisfied with their program choice. Of teachers earning certification in an alternative program, 82% would recommend the program to others while 15% reported they "maybe" would and 3% reported that they would not recommend their alternative route to certification program (Feistritzer, 2005c).

When asked "Would you have become a teacher if an Alternative route was not available?" 47% report they would not have become a teacher without the alternative route option, 25% were "not sure, " 22% would have completed a traditional education program, and 8% would look for a position in a private school or other setting that would not require teacher certification (Feistritzer, 2005c). With approximately half of all

alternative route teachers stating they would not have become a teacher without this route to certification, alternative certification programs seem to be fulfilling a need that traditional programs can not fill.

Georgia Teacher Preparation and Certification

Georgia's State Constitution provides that "an adequate public education for the citizens shall be a primary obligation of the State of Georgia." Title 20, *Education*, the Official Code of Georgia Annotated (O.C.G.A. §20, 2006), creates the Professional Standards Commission (PSC) and assigns it responsibility for a regulatory system for "certifying and classifying" professional employees in public schools. Title 20 also requires professional employees of all Georgia public elementary and secondary schools to hold state certification. Certification regulations and procedures have been established to evaluate the credentials of prospective teachers, counselors, and administrators to ensure they meet specified preparation standards and requirements. State certification is designed to provide a standardized base level of professional knowledge and skill set that educators working in Georgia public schools all should have.

The Georgia Professional Standards Commission (GA PSC) assures that Career and Technical Certification (CTE) is similar to other academic educator certification. Studies have shown CTE teacher certification to be similar on a national level also (Bruening et al., 2001; Silverberg, Warner, Fong, & Goodwin, 2004). One difference regarding CTE certification is regarding Trade and Industrial Education because it can also be obtained through a preparation program, experience, and industry licenses (GPA PSC, 2008).

GA PSC classifies four possible routes to certification and describes them in detail on their web site (GA PSC, 2008). These routes are Traditional Certification, Alternative Routes, Internal Exchange Route, and Permit Route. Georgia Universities and Colleges provide traditional and sometimes alternative routes to teacher certification. The State of Georgia reviews internal exchange routes, often referred to as reciprocity, to teachers certified in states with similar teacher certification standards and requests that necessary course requirements be met at an approved Georgia university or college. Georgia also offers a State alternative program, Georgia Teacher Alternative Preparation Program (GA TAPP, 2008). School districts now can request for permit certification to fill immediate needs, allowing those who are not trained in the teaching profession entry into the classroom (GA PSC, 2008).

Any prospective teacher seeking to obtain certification in Georgia must pass the appropriate assessment. The Georgia Professional Standards Commission (GA PSC, 2008) describes the history of Georgia assessments:

> In 1972, the State Board of Education initiated a performance-based certification program. A major component of this program was the assessment of an individual's teaching field content knowledge. The Georgia Teacher Certification Test (TCT) was the required content knowledge assessment from 1978 through June 1997. From July 1, 1997 until September 1, 2006, Praxis II Subject Assessments were required for certification in Georgia. September 1, 2006, Georgia implemented the

> GACE series of educator assessments, newly aligned with state and national standards for educator preparation and with state standards for P-12 student curriculum. (n. p.)

The Georgia Assessments required for teacher certification are the Georgia Assessments for the Certification of Educators (GACE) Basic Skills Test (exempt from this requirement if the applicant has a minimum SAT score of 1000, minimum GRE score of 1030, or a minimum ACT score of 43), and the appropriate Georgia Assessments for the Certification of Educators (GACE) teaching field content exam. These testing requirements must be met in order to earn a teaching certificate in the State of Georgia (GA PSC, 2008).

Traditional Teacher Certification in Georgia

The first route, traditional certification, is defined by the GA PSC (2008) as obtaining a Georgia certificate by completing a state-approved educator preparation program, usually at a college or university. It is important to note that while Georgia's colleges and universities offer degrees in Education, they do not certify teachers. The required coursework, referred to as "approved programs" by the GA PSC, are aligned with the standards required by the State of Georgia to obtain teacher licensure. As with other professional licenses, teachers must pass the previously described state assessments before certification can be granted. Thus, a prospective teacher may complete the program coursework and field study (i.e., student teaching or internship) but be unable to teach unless they also pass the appropriate state exam. Once the licensure exam and approved program requirements are complete the university or college can recommend state teaching licensure on the student's behalf by sending paperwork from the university.

Traditional routes in the State of Georgia include three alternatives: earn a teaching degree and certificate, earn certificate only (no new degree), or interstate mobility/reciprocity (GA PSC, 2008). The *earn a teaching degree and certificate* route requires that the applicant enroll in a state approved college program for the degree and certificate field desired. After completing all degree program requirements and passing GACE assessments, a recommendation form from the college would be given. Another form of traditional certification the GA PSC describes is the *earn certificate only (no new degree)* option. In order to satisfy this requirement the applicant must already have earned a bachelor's degree. Lynch (1996) explained that some CTE areas allow work experience in lieu of this degree requirement. Prospective teachers can then enroll in a state-approved college program as a non-degree student to earn their teaching certificate. As with prior routes, after completing all program requirements and passing GACE assessments, a recommendation would be given from the college.

Most universities and colleges refer to this type of program as an "alternative program" in comparison to their traditional degree programs mainly due to differences in field study and course requirements, however the GA PSC (2008) considers this a traditional route. H. Hall (personal communication, March 26, 2007) suggests it would be more appropriate to refer to the university/college based traditional program as a "pre-service program" and the university/college based alternative program as a "in-service program" due to this confusion and also because from the prospective of a potential student with a degree in an area outside of teaching, the non-traditional route is not an alternative for them, but rather the necessary route to take for teacher training and certification.

The last traditional route to teacher certification is interstate mobility, commonly referred to as reciprocity. In order to qualify the applicant must hold an out-of-state professional certificate or have completed a state-approved educator program and provide a recommendation from the state in which they were certified. The Georgia Professional Standards Commission will then review the application. Specific Georgia requirements to be completed will be determined based on individual experience and credentials. These requirements can be filled by taking coursework at a Georgia university or college if coursework is required. Recent out-of-state work experience may exempt some requirements (GA PSC, 2008).

Alternative Teacher Certification in Georgia

Another path toward teacher licensure, alternative certification, is defined by the GA PSC (2008) as obtaining a Georgia certificate while the applicant works as an educator. There are three categories of alternative routes to certification identified by the PSC, they are the Georgia Teacher Alternative Preparation Program (GA TAPP), and two local school district programs: Non-Renewable Certificate Based Option, and Non-Renewable Test Based Option.

Georgia Teacher Alternative Preparation Program

The Georgia Teacher Alternative Preparation Program (GA TAPP) is a certification program initiated by the State of Georgia. The GA TAPP web site (2008) describes the program in detail:

> The Georgia Teacher Alternative Preparation Program (Georgia TAPP) is a classroom-based teacher preparation option for individuals who have the basic qualifications to teach early childhood, middle-grades, secondary or

> P-12 education but have not completed a teacher preparation program. The program is not intended to replace regular college teacher education programs. It is, instead, an alternative option for individuals who hold a bachelor's degree or higher but who did not complete teacher education requirements as part of their degree programs. Georgia TAPP seeks to equip teacher-candidates with the skills to ensure a reasonable expectation of initial success in their classrooms, and to put in place a supervised internship/induction program that will help them move toward subsequent mastery of teaching. (n. p.)

To be eligible for the program the applicant must hold a bachelor's degree from a GA PSC accepted college with a minimum grade point average of 2.5 on all work completed, a passing score on the GACE basic skills test, a satisfactory criminal background check, and procure a teaching position by a participating Georgia school system. The summer session is a concentrated workshop to prepare the beginning teachers for the classroom. Once accepted into the GA TAPP program the participant will be provided a support team of three people. The team works to develop an individual plan of study. When the requirements determined in the plan are met the participant will then take courses on essential elements of instruction. After all instruction is complete the support team work with the applicant to complete a Professional Standards Commission (PSC) information form. Once the summer workshop requirements are complete the GA TAPP intern will begin a two-year internship. This internship involves teaching full time while completing additional coursework through a Georgia Regional Education Support Agency (RESA) or at an approved college or university (GA TAPP, 2008).

The GA TAPP intern will take the GACE exams at the end of the first semester of teaching. If the intern receives a failing score on the content portion of the certification test, the support team modifies their individual plan of study to incorporate instruction in weak areas. At the end of the first year of teaching the intern's Principal gives a recommendation for the intern to continue or terminate the GA TAPP program (GA TAPP, 2008).

Teacher Certification in Georgia through School Districts

There are two non-renewable certificate based options. If the applicant holds an inactive/expired Georgia teaching certificate the school system can request a new non-renewable certificate in the same field once held. The second type of non-renewable certificate is when the applicant holds a valid clear renewable Georgia teaching certificate and wants to add an additional field. School systems may request an additional non-renewable certificate in a different field. The non-renewable certificate can be changed to a clear renewable certificate if additional requirements such as coursework and area content GACE assessments are complete. Each applicant is reviewed and requirements that must be completed will be identified on the certificate. Once the requirements are met, the school system can apply for the certificate status to be changed to a clear and renewable certificate (GA PSC, 2008).

The most recent avenue approved for alternative teacher licensure is the new *"test out"* certification option. This option allows aspiring teachers holding at least a bachelor's degree to be hired by a school system in Georgia under the following three options (GA PSC, 2008):

Option A. Have Passed the Georgia Required Basic Skills Assessment (GACE™ Basic Skills) and the Georgia Required Subject Content Assessment (GACE). Employing system requests certificate; applicant affiliates with state-approved program, completes requirements and obtains recommendation during validity period of certificate.

Option B. Have Passed the Georgia Required Basic Skills Assessment (GACE Basic Skills) and the Georgia Required Subject Content Assessment (GACE) and a Georgia approved professional pedagogy assessment (GACE Professional Pedagogy). Must also hold a PSC-accepted college degree in the certificate field or a PSC-designated related field. Employing system requests certificate; applicant completes 1-year supervised program and remaining special Georgia requirements during validity period of certificate.

Option C. Have Passed the Georgia Required Basic Skills Assessment (GACE Basic Skills) with employment offer in a Special Education field. Under specific conditions, at the discretion of an employing school system, Non-Renewable certification is available in the fields of Special Education without having passed the GACE prior to eligibility for employment. (n. p.)

Within the five-year time frame, the applicant will need to complete any listed GA PSC requirements as well as a one-year supervised practicum (2008) where the applicant will:

> work under the guidance and supervision of a qualified mentor and program supervisor. The supervised practicum may only be administered by public or independent school systems, RESAs, and colleges that are approved specifically for the practicum by the GA PSC. (n. p.)

Once these requirements are met, the school system has the option of recommending the applicant for a Clear Renewable certificate.

Quality of Traditional and Non-Traditional Certified Teachers

It is critical that both traditional and non-traditional teacher CTE certification programs train quality teachers (Ruhland & Bremer, 2004). In a project entitled *Alternative Teacher Certification Procedures and Professional Development Opportunities for Career and Technical Education Teachers* (Ruhland & Bremer, 2002), themes of effective CTE teachers were drawn from the responses:

> Effective teachers are lifelong learners, they said, who remain interested in the material they teach and who pursue all kinds of learning opportunities, often on their own time. They vary their instructional methods, try out new ideas, and work hard to reach every student, even those with special needs. They maintain a good rapport with students, and have a personal interest in their success. In addition, they have excellent classroom management skills and are well organized. (p. 42)

In order to fill teacher shortage fields while complying with reform movements stressing the need for qualified teachers, alternative certification began in order to recruit non-traditional persons into the teaching profession and provide the ability to certify them. While they do not provide teacher training, teacher shortages have led to the creation of national programs that strive to recruit teachers.

To attract high school students into the education profession, many systems across the nation are offering elective courses on careers in education adopting a "grow your own" philosophy. These programs "allow schools and districts experiencing severe shortages to create their own pipeline of new teachers by partnering with colleges to recruit, prepare, and retain teachers" (Hirsch, 2001, p. 5). These students would most likely enter a traditional teacher education program as their undergraduate major and enter the teaching profession in their twenties.

Other national initiatives aim to recruit older prospective educators with military or industry work experience by introducing them to alternative certification. Programs such as Troops to Teachers and Spouses to Teachers work to assist active duty, reserve, and retired military and their spouses to become public school teachers through funding and placement assistance in certification programs and teaching positions. Troops to Teachers offer stipends of $5,000 to offset the costs of obtaining teacher certification and a $10,000 bonus in return for teaching for three years in a high need school (Troops to Teachers, 2007). Spouses to Teachers offer $600 to assist with certification costs (Spouses to Teachers, 2007). Teach for America is another national program that recruits prospective teachers by offering a loan forgiveness of $9,450 over two years in exchange

for placement in public schools that are in low-income communities (Teach for America, 2007).

In the beginning, alternative programs were considered "a controversial movement that some critics called "sub-standard"...now the movement has become a respectable, prime source for recruiting highly qualified individuals who wouldn't have entered teaching otherwise" (Feistritzer, 2007b, p. 1). One reason for the negative view of alternative certification was due to the fact that prior to the National Center for Education Information classification of state alternative routes, states were dubbing every program that wasn't a typical college education degree program as "alternative certification," such as emergency certificates (2007b). Those critical of alternative certification felt students would suffer due to less pedagogy. They purported that knowledge of ones subject matter or having prior work experience does not necessarily mean the teacher will be effective (Darling-Hammond, 2000; Darling-Hammond & Youngs, 2002; Dill, 1996; Stoddart & Floden, 1995).

Other researchers were in favor of the ability to recruit persons from industry into education. Haberman (1994) stressed that life experiences such as training learned on the job add great value to the classroom that traditional teachers have not experienced. Schlecty and Vance (1983) cited negative statistics about the traditionally prepared teachers, claiming they had lower grade point averages and college entrance scores than other majors. Some researchers have even questioned the value of traditional certification programs altogether (Hess, 2001; Walsh, 2001).

As alternative certification progressed, education reform efforts led states to discontinue the use of emergency certificates (Feistritzer, 2006). An emergency teaching

certificate gives prospective teacher a "waiver which allows the individual to teach, usually without any on-site support or supervision, while taking the traditional teacher education courses requisite for full certification" (Feistritzer 2007c, n. p.). One reason for this change was the aforementioned NCEI annual publication *Alternative Teacher Certification A State-by-State Analysis* used to categorize the different types of alternative certification data (Feistritzer & Chester, 1991). The project has given states a way to not only classify their alternative programs but to view what other states are doing and obtain statistical information. This, in turn, has led to decreased issuance of emergency and temporary certification routes, which are being replaced with true non-traditional routes created to meet the needs of specific regions. These new alternative programs have opened the door for those in industry and the military to change their careers later in life to the education profession.

Feistritzer (2005a) comments on the research criticizing alternative forms of teacher certification, claiming accuracy concerns of data obtained from scales that involve teachers reporting their certification route. She found that most teachers do not know which alternative route they went through, even when given a list of the established NCEI categories. Feistritzer stresses that due to this confusion, only studies where program providers or state licensing agencies categorize the teachers from alternative programs should be considered for review.

Feistritzer (2005a) also cautions that when researching comparisons between teachers from traditional and non-traditional programs, or the effectiveness of the teachers they produce, that the researcher look at how programs are defining these routes. Feistritzer (2005a) surmises that the debate whether or not non-traditional certification

programs should be in place needs to be changed to how to better support the programs that are producing effective teachers and help struggling programs become effective ones. She reports that since teachers have to be certified in order to teach and there are many people who would like to teach with other degrees and career experiences, high quality certification programs should be designed to meet the needs of these prospective educators. These programs can bring effective teachers into the classrooms across the nation:

> The data show for the first time the advantages of having individuals entering from alternate routes...they are more mature, more satisfied with several aspects of teaching, feel competent as teachers, and are more likely to remain in teaching than recent college graduates entering teaching. (n. p.)

This data is encouraging to established non-traditional programs. Since both traditional and non-traditional programs reflect the training of effective teachers (Feistritzer 2005a, 2005b), the programs may now turn their attention toward how to better promote teacher efficacy in order to train teachers who not only have the content and pedagogy knowledge, but also efficacy in their teaching ability as well.

Demographics based on Teacher Certification Program Type

Recent studies have provided a picture of the demographics of teachers entering the education profession. The National Center for Education Information conducted studies entitled *Profile of Alternate Route Teachers 2005* (Feistritizer, 2005c) and *Profile of Teachers in the U.S. 2005* (Feistritizer, 2005b). The studies give insight into the characteristics of persons who have obtained teaching certification through traditional and non-traditional routes. Feistritzer, president of the National Center for Education

Information, comments that "the data show for the first time the advantages of having individuals entering from alternate routes...they are more mature, more satisfied with several aspects of teaching, feel competent as teachers and are more likely to remain in teaching than recent college graduates entering teaching" (Feistritzer, 2007b, p. 1).

For those persons wanting to teach but have work experience and/or a degree in a field outside of education, a non-traditional certification program provides a means to earn state teaching licensure. The NCEI reports that approximately 50,000 individuals entered the teaching profession through alternative routes during 2005, an increase by 11,000 from 2004. Non-traditional certification programs certify older teacher populations with greater numbers of males and minorities than those who obtain certification through traditional paths**.** Of those participating in the comprehensive national survey, 47% said that they would not have become teachers without the alternative route program whereas 20% said they would have gone through a traditional program to teach if the alternative route were not available (Feistritzer, 2005c).

Specific to CTE areas, a study conducted by Ruhland and Bremer (2004) found that, 67% of career and technical educators were certified through a traditional program and 33% by non-traditional certification means.

Age and Teacher Education Program Choice

Traditionally prepared educators are typically younger than non-traditional route candidates. Prospective teachers who know in advance that they desire to become educators usually obtain certification by enrolling in a state approved teacher education program at a college or university. Then, they follow procedures of the program to obtain a Bachelor's degree in Education leading to state certification. The average

undergraduate degree lasts four years, therefore, if a student enters the program directly after high school they will be around 22 or 23 years old upon entering their teaching career (Ruhland & Bremer, 2004).

In contrast, non-traditional programs attract a more aged cohort. Feistritizer's study (2005c) found that:

> Nearly two-thirds (63 percent) of teachers who are entering the profession through alternate routes are 30 years of age or older at the time of entry into an alternate route to teacher certification. Four in 10 (39 percent) of alternate route teachers entered a program at age 40 or older. More than one in 10 (11 percent) began an alternate route to teacher certification when they were 50 years or older. (p. 7)

Ruhland and Bremer (2004) found that in studying CTE combined traditional and non-traditional teachers certified between 1990 and 2000, 20% were 51 years of age or older, 29% were between 41 and 50 years old, 30% were between 30 and 40 years old, and 21% were under 30 years of age.

Feistritizer (2005a) commented that "the most dramatic change in the past few years has been a shift toward people beginning their preparation to teach later in life and later in their careers" (p. 2). The results from the NCEI survey (Feistritizer, 2005c) reveal that as age increases, there is a decrease in the choice to change one's career to teaching with the exception of the alternative route:

> More than half (59 percent) of those surveyed who were in their 50s or older when they entered an alternate route say they would not have become a teacher if an alternate route had not been available. Half (50 percent) of those in their 40s,

> 46 percent of those in their 30s and 45 percent in their 20s say they would not have become teachers if an alternate route had not been available. (p. vi)

Many teacher candidates begin non-traditional teaching programs after retirement from their first career or after military service. National, state, and district teacher recruitment initiatives assist in attracting prospective educators into non-traditional programs (Spouses to Teachers, 2007; Teach for America, 2007; Troops to Teachers, 2007).

Gender and Teacher Education Program Choice

In the United States, 25% of all teachers (traditional and non-traditional) certified combined) are male and 75% are female (Feistritizer, 2005b). Non-traditional certification may assist in evening out the genders. Of non-traditional teachers in Feistritizer's (2005c) report, 37% were men and 63% were women. Of those who are non-traditionally certified, more than half (52%) of men and 45% of women say they would not have become teachers if non-traditional certification were not an option.

Ruhland and Bremer's (2004) study shows that in career and technical education non-traditional programs, males have even more visibility: 52% percent of the respondents were female and 45% were male (3% of the respondents did not indicate gender). This is an increase of 8% more males and 11% more females from Feistritizer's study. These differences could possibly be due to the nature of CTE programs to attract industry employees into their programs. The gender differences between the traditionally and non-traditionally certified groups raise questions of why more females are choosing the traditional programs, and conversely why males appear to want to teach but are not attracted to undergraduate education programs.

Ethnicity and Teacher Education Program Choice

In regard to ethnicity, 89% of the total teaching force is Caucasian (Feistritizer, 2005b) and 11% of the teaching force is non-Caucasian. Non-traditionally certified educators are more diverse, with a makeup of 67% Caucasian and 32% percent citing other ethnicities (14% Hispanic or Latino, 13% African American, 2% American Indian or Alaskan Native, 2% Asian American, and 1% Multiracial). This 22% gain in diversity from the total teaching force is a start toward a more equally diverse teacher population.

Of these non-traditional program teachers, 53% of Hispanics, 48% of Caucasians, and 43% of African Americans in the study said that if the non-traditional program had not been an option they would not have chosen the teaching profession (Feistritizer, 2005c). This indicates that alternative programs are assisting in promoting ethnic diversity among educators.

Ruhland and Bremer (2004) reported that 87% of career and technical educators were Caucasian. Other ethnicity data were not specified, however this data is similar to the aforementioned Feistritizer study which found that 89% of the total national teaching force is Caucasian (2005b). There is a need to have more diversity in the nation's teacher population. While teachers influence achievement of all students, low-income culturally diverse students particularly need efficacious teachers (Frey, 2002; Tucker, Porter, Reinke, Herman, Ivery, Mack, & Jackson, 2005).

Tucker et al. (2005) reported that "teacher efficacy is related to racial attitudes and perceived ability to work with diverse students. Many teachers feel unprepared to teach students from culturally different backgrounds" (p. 30). This finding is troubling in light of the data previously mentioned regarding the lack of diversity in America's

teaching force. Non-traditional programs can assist in preparing a more diverse teaching force as well as increasing the efficacy of new teachers from all different ethnicities and cultures in order to meet the needs of all students (Chou, 2007).

Non-Teaching Work Experience in Certification Related Field of Study

Traditional program teacher graduates generally have less non-teaching certification related work experience than their non-traditional program counterparts. One explanation for this is that they flow from high school graduation directly into a post-secondary program where most become a full-time student. These teachers may find internships or part-time positions to gain industry experience, but due to time and age constraints findings show that compared to the non-traditional program graduates they have less industry experience (Feistritizer, 2005c; Ruhland & Bremer, 2004).

Non-traditional programs are attracting those with industry experience wanting to change careers. These programs are the main paths those in industry take to earn teacher licensure, and this is reflected in the comparison between this group and traditionally certified teachers. If a non-traditional route had not been an option, 54% of those from professional fields outside of education would not change their careers to teach. Prior to entrance into their non-traditional program, 47% were in a non-education related career before enrolling (Feistritizer, 2005c).

One explanation for the higher percentage of business-to-teaching crossovers turning to alternate certification programs is the time it takes to complete the traditional certification program. Older students may not have the financial resources or time to devote to quitting work in order to become a full-time education student. Returning to college as a full-time student can be especially difficult since careers in education

typically earn lower salaries than those in similar content fields from industry (Liu & Meyer, 2005). Furthermore, almost 80% of these potential teacher candidates have already earned a bachelor's degree in a field other than education, and do not desire to obtain a second undergraduate degree (Feistritizer, 2005c). The data suggests that non-traditional certification programs seem to be meeting a need that is allowing persons to change careers, regardless of age.

Bandura's Self-Efficacy Theory

Albert Bandura, a well-known theorist known as the "Father of Social Cognitive Theory and of self-efficacy" (Pajares & Urdan, 2006, p. ix) began the research that this study and many others have continued. The theory of self-efficacy, a branch of theory stemming from Bandura's social cognitive theory (1977b), claimed that a person's behavior is based upon two distinct factors: outcome expectation and efficacy expectation. Outcome expectation is when one believes "a given behavior will lead to a certain outcome" (p. 193). Efficacy expectation goes a step beyond outcome expectation in that the person believes not only that the behavior will lead to a given outcome, but that he or she has the ability to perform the "behavior required to produce the outcome" (p. 193). These two expectations are different in that one can believe that a course of action will result in a specific outcome but may question if he or she has the ability to perform those behaviors. "It is important to note that self-efficacy is a motivational construct based on self-perception of competence rather than *actual* level of competence. A teacher's self-perceived level of competence may be either higher or lower than an external assessment of teaching skill" (Tschannen-Moran & Woolfolk Hoy**,** 2007, p. 5).

Self-efficacy is a judgment of one's confidence, a difference from self-esteem, which is a judgment of self-worth. Self-esteem is not specific to a particular context or task, and relates to emotions. In contrast, self-efficacy is context specific and can be task specific. Rather than relating to how one feels, self-efficacy associates with if one can do something, often in reference to a specific action or goal (Bandura, 1997). For example, one can have high self-efficacy in relation to teaching computer skills, and low self-efficacy in relation to teaching history. Typically self-esteem would either be generally high or low rather than context specific. Pajares and Schunk (2001) refer to self-esteem as self-concept. They explore differences between self-concept and self-efficacy stating:

> Self-efficacy and self-concept represent different views of oneself. When individuals tap into their self-efficacy or their self-concept beliefs, they must ask themselves quite different types of questions. Self-efficacy beliefs revolve around questions of "can" (Can I write well? Can I drive a car? Can I solve this problem?), whereas self-concept beliefs reflect questions of "being" and "feeling" (Who am I? Do I like myself? How do I feel about myself as a writer?). The answers to the self-efficacy questions that individuals pose to themselves reveal whether they possess high or low confidence to accomplish the task or succeed at the activity in question; the answers to the self-concept questions that individuals pose to themselves reveal how positively or negatively they view themselves, as well as how they feel, in those areas. As is readily apparent, the typical self-concept item "Mathematics makes me feel inadequate" (Marsh, 1992) differs markedly from a self-efficacy question that may begin with "How confident are you that you can successfully solve the following problem?" (p. 239)

Self-efficacy theory suggests that an individual's behavior, environment, and other cognitive factors such as outcome expectations are all highly interrelated to self-efficacy. Bandura (1978) originally defined self-efficacy as "a judgment of one's ability to execute a particular behavior pattern" (p. 240). In later self-efficacy literature Bandura (1995) modified the definition as "the belief in one's capabilities to organize and execute the courses of action required to manage perspective situations" (p. 2). Wood and Bandura (1989) concluded that self-efficacy beliefs are also correlated to motivation and performance. Judgments of self-efficacy are made that determine the effort and length of perseverance one will expend on a task. As self-efficacy increases, so does the effort exerted to conquer a challenge. Alternatively, the lower the self-efficacy one has of accomplishing a given task, the effort extended to achieve it lessens, sometimes to the point of giving up or quitting (Bandura & Cervone, 1986; Bandura & Schunk, 1981; Weinberg, Gould, & Jackson, 1979). In his book, *Self-Efficacy: The Exercise of Control* (1997), Bandura described this concept in more detail stating:

> People guide their lives by their beliefs of personal efficacy. Perceived self-efficacy refers to beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments... such beliefs influence how long they will persevere in the face of obstacles and failures, their resilience to adversity, whether their thought patters are self-hindering or self-aiding, how much stress and depression they experience in coping with taxing environmental demands, and the level of accomplishments they realize. (p. 3)

Bandura (1977a) identified four major sources of information used by individuals when forming self-efficacy expectations: performance accomplishments, vicarious

experience, verbal/social persuasion, and psychological state/emotional arousal. Performance accomplishments are personal assessment information that is based on an individual's personal mastery accomplishments (i.e., past experiences with the specific task being investigated). Previous successes raise mastery expectations, while repeated failures lower expectations (Saks, 1995; Silver, Mitchell, & Gist, 1995). This is especially true for failures early on. Once strong performance accomplishments are achieved, failures are less likely to negatively effect self-efficacy. Failures that are overcome through persistence efforts tend to strengthen self-efficacy. Bandura (1997) stressed that mastery experiences are the most important factor in creating self-efficacy judgments.

The second source of information is vicarious experience, which is gained by observing others perform activities successfully. This is often referred to as modeling, and it can generate expectations in observers that they can improve their own performance by learning from what they have observed (Bandura, 1977, 1978). Observed experiences of a master teacher is an example of modeling information for a student teacher.

Social persuasion is the third source of information, and it refers to activities where people are led, through suggestion, into believing that they can cope successfully with specific tasks. Coaching and giving evaluative feedback on performance are common types of social persuasion (Bandura, 1977, 1978; Bandura & Cervone, 1986).

The final source of information is physiological and emotional state. An individual's physiological or emotional state influences self-efficacy judgments with respect to specific tasks. Emotional reactions, such as stress or anxiety, to such tasks can

lead to negative judgments of one's ability to complete the tasks (Adams, 1999; Bandura, 1988).

Bandura (1982) reviewed a variety of different lines of self-efficacy research, and concluded that self-efficacy theory has considerable potential explanatory power. His review found that perceived self-efficacy helps to account for a wide variety of individual behaviors, including: changes in coping behavior produced by different modes of influence, levels of physiological stress reactions, self-regulation, achievement strivings, growth of intrinsic interest, and choice of career pursuits.

Self-efficacy has been shown to apply across a wide range of situations and is a good predictor of future performance and behavior (Bandura, 1978; Gist & Mitchell, 1992). From his observation of the results from various experiments, Bandura (1982) concluded that "perceived efficacy is often a better predictor of behavior in generalization tests than is past performance... behavior is raw data that must be cognitively appraised for its efficacy value" (p. 61). Other authors have also concluded that the empirical evidence supporting self-efficacy theory is very strong (Ashton & Webb, 1986; Gibson & Dembo, 1984; Tschannen-Moran & Woolfolk Hoy, 2001; Woolfolk & Hoy, 1990).

Self-efficacy theory appears to be particularly well suited to studying teacher behaviors (Bandura, 1997). Once educators earn a teaching certificate and are handed their own classroom to manage, there is minimal supervision. New teachers must then rely heavily on their own abilities and initiative to perform job tasks. Often the teacher spends most of the day away from other teachers, therefore the potential for isolation can be high. Teacher self-efficacy can be an important factor determining teaching practices and the length a teacher will stay in the classroom (1997).

In respect to studying general teacher self-efficacy, Career and Technical educators may have different environments that warrant further study of teacher self-efficacy. It is a common practice for Career and Technical Education (CTE) classrooms to be remotely located from other teaching disciplines (Rose, 2007). CTE classrooms are often placed in separate “wings” than traditional classes, sometimes at the back of a school, in order to have room for their more specific tasks (i.e., automotive shops, technology modules, etc.).

While Career and Technical educators do tend to bond across CTE certification fields, this bond across disciplines that creates a sense of comradery is possibly less than from teachers of traditional courses (Rose, 2007). CTE educators can be the only person teaching within their discipline at their school, whereas a mathematics teacher, for example, would have many teachers to pull resources and support from within their discipline. School systems that learn how to maximize teaching efficacy with respect to the school environment (i.e., within and across teaching fields and networking of teachers by subject within the district) may be rewarded with teachers who are less likely to leave and that can increase student achievement (Bandura, 1997).

While similar to outcome and expectancy expectations, there are differences between the factors of self-efficacy expectations in regard to applying self-efficacy theory to the teaching profession. Gibson and Dembo (1984), in applying the theory of self-efficacy to education, renamed outcome expectation as teaching efficacy (TE) and efficacy expectation as personal teaching efficacy (PE). Tschannen-Moran and Woolfolk Hoy (2001) in further exploration of self-efficacy theory defined teacher efficacy as a teacher's "judgment of his or her capabilities to bring about desired outcomes of student

engagement and learning, even among those students who may be difficult or unmotivated" (p. 783).

Self-efficacy was used as the theoretical framework for this study because it has consistently been found to be associated with teacher performance in numerous studies, including those of increased student achievement (Armor et al., 1976; Ashton & Webb, 1986; McLaughlin & Marsh, 1978; Moore & Esselman, 1992; Ross, 1992), student motivation (Midgley, Feldlaufer, & Eccles, 1989), increased commitment to teaching (Burley et al., 1991; Coladarci, 1992), lower teacher stress (Greenwood et al., 1990), increased classroom management skills (Woolfolk et al., 1990), promotion of student engagement (Ashton & Webb, 1986) and providing consistent innovative instructional strategies (Berman et al., 1977; Cousins & Walker, 2000; Guskey, 1988; Stein &Wang, 1988). Teachers with high efficacy are less likely to criticize students who make mistakes (Ashton & Webb, 1986), are more likely to spend extra time working with students who are struggling in their class (Gibson & Dembo, 1984) and are also less likely to refer students with lower socioeconomic status and students with difficult behavior for special services (Meijer & Foster, 1988; Podell & Soodak, 1993; Tschannen-Moran et al., 1998).

The literature reveals that self-efficacious teachers work harder, persist longer, persevere in the face of adversity, have greater optimism, lower anxiety, and achieve more than those who lack this belief in their own teaching capabilities (Bandura, 1997). According to self-efficacy theory, if teacher trainers can learn how to increase prospective educators' sense of self-efficacy judgments about his or her abilities to complete teaching related tasks, the result would lead to improved performance and thus improved student achievement. According to Bandura (2006a):

> There are three main pathways through which efficacy beliefs play a key role in cognitive development and accomplishment: students' beliefs in their efficacy to regulate their learning activities and to master academic subjects, teachers' beliefs in the personal efficacy to motivate and promote learning in their students, and the faculties' collective sense of efficacy that their schools can accomplish significant academic progress. (p. 10)

There is evidence to suggest that teachers with higher self-efficacy raise self-efficacy levels of their students (Anderson, Greene, & Loewen, 1988). Teacher self-efficacy also effects the climate of the school. When the teachers have a collective sense of efficacy towards believing that the students are capable of learning, the students achieve more (Bandura, 1997).

The Cyclical Nature of Teacher Efficacy Model

The model for teacher self-efficacy is based on Albert Bandura's self-efficacy theory, a construct of his social cognitive theory. Tschannen-Moran, Woolfolk Hoy, and Hoy, developers of the model of the cyclical nature of teacher efficacy (1998) that drives this study stress that "in these days of hard-nosed accountability, teachers' sense of efficacy is an idea that neither researchers nor practitioners can afford to ignore" (p. 228). The model of teacher efficacy begins with the cognitive progression of Bandura's self-efficacy theory sources of efficacy information: verbal persuasion, vicarious experiences, physiological arousal, and mastery experiences. The teacher then analyzes the teaching tasks and assesses his or her personal teaching competencies. This processing determines the teacher's level of teaching efficacy in the situation. Teacher efficacy determines consequences (i.e., goals, efforts, and persistence) which lead to performance. The model

is cyclical "the performances and outcomes create a new mastery experience, which provides new information that will be processed to shape future efficacy beliefs" (Woolfolk Hoy & Davis, 2006, p. 119).

Historical Development of Teacher Efficacy Scales

While most modern research in teacher efficacy is grounded in Albert Bandura's self-efficacy theory, the first studies of self-efficacy were grounded in Rotter's social learning theory. RAND researchers added two questions to a study of teacher characteristics and student learning after reading an article by Rotter (1966) entitled *Generalized Expectancies for Internal Versus External Control of Reinforcement*. The article stated that teachers have two schools of thought when it comes to teacher control over the ability to have an impact on student learning: external and internal control. Teachers who agree that their effect on student learning depend more on the environment would be labeled as reflecting an external control. Alternatively, teachers who believe they can teach students regardless of the environment reflect an internal control. Rotter's concept of teaching efficacy was "that factors under their control ultimately have greater impact on the results of teaching than factors in the environment or in the student factors beyond the influence of teachers" (Tschannen-Moran & Woolfolk Hoy, 2001, p. 785).

The RAND studies asked teachers to rate their level of agreement to the following two questions:

1. 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.
2. If I try really hard, I can get through to even the most difficult student.

The item ratings were then added and the "sum was called teacher efficacy (TE), a construct that purported to reveal the extent to which a teacher believed that the consequences of teaching - student motivation and learning - were in the hands of the teacher, that is, internally controlled" (Tschannen-Moran & Woolfolk Hoy, 2001, p. 784). Teacher efficacy was shown to have "a strong positive link not only to student performance but to the percent of project goals achieved, to the amount of teacher change, and to the continued use of project methods and materials after the project ended" (Tschannen-Moran & Woolfolk Hoy, 2001, p. 785).

The RAND studies sparked others to research teacher efficacy. Three other scales that were developed under Rotter's theory are the Guskey (1981) Responsibility for Student Achievement, Rose and Medway (1981) Teacher Locus of Control, and Ashton, Olejnik, Crocker, and McAuliffe (1982) Webb Efficacy Scale.

Guskey's (1981) responsibility for student achievement instrument was a 30-item scale. Participants were given two choices and were asked to distribute 100 percentage points between the two alternatives. As the name of the scale implies, responsibility for student achievement (RSA) scores were the extent to which the teacher felt that student achievement was his or her responsibility. The scale had two dimensions: R+ responsibility for student success and R- responsibility for student failure. Guskey (1987, 1988) modified the scale to a 10-point distribution in later studies. Findings from the studies showed that teacher efficacy has bearing on student achievement. Teachers were more confidant in their abilities to inspire positive effects from students however, rather than to deter negative ones. Review of the literature did not find other researchers who had used this scale.

In another attempt to measure teacher efficacy, the teacher locus of control scale was developed (Rose & Medway, 1981). This scale was 28 situational items that had two choices. Half of the questions were student success situations, and the other half of the questions described student failures. For either type of questions (student success or failure) there were two answer choices, one relating to an internal teacher outcome (I+ for items regarding student success and I- for items student failure) while the other answers blamed external factors for the situation. Findings from the study were that due to a more specific teaching context, the measure more accurately predicted the behavior of teachers than its predecessor, the Rotter's I-E Scale.

The Webb Efficacy Scale (Ashton et al., 1982) was a seven item forced choice scale. The forced choice format was chosen to reduce social desirability bias issues. Each item contained two statements and the participants were asked to choose the statement they agreed with most strongly. The findings from this study concluded that the higher the score on the scale the less likely the teacher would be angered or impatient in their interactions with students. No other instances were found in the literature of further use of this scale.

Other researchers began a second branch of research stemming from Bandura's social cognitive and self-efficacy theories. In effort to create a measure stemming from Bandura's research, Ashton, Buhr, and Crocker (1984) created the Ashton Vignettes scale to assess efficacy that would be specific to the situational context. The format of the scale was 50 items in the form of situational vignettes. The first draft of the scale asked participants to read the vignettes and then rate themselves on a scale of extremely ineffective to extremely effective. This measure was found to be significantly correlated

to the RAND questions previously mentioned. The second draft of the scale asked the participants to respond in regards to how much more or less effective they were given the situation than other teachers were. This version did not correlate to the RAND items. Both scales asked the teachers to assess and rate their stress level given the situation at hand in order to determine if teacher stress and efficacy were interchangeable. The study found that they are not significantly correlated. This researcher found no other study using the scale, and note that Tschannen-Moran and Woolfolk Hoy (2001) agreed that this measure has not received wide acceptance.

Wanting to create a measure from both the RAND studies as well as Bandura's social cognitive theory, Gibson and Dembo (1984) developed an instrument entitled the *Teacher Efficacy Scale*. The format for the scale was a 30-item Likert scale to measure teacher efficacy. Tschannen-Moran and Woolfolk Hoy (2001) describe how the items were found to be based on two factors:

> Gibson and Dembo assumed that the two factors reflected the two expectancies of Bandura's social cognitive theory: self-efficacy and outcome expectancy. Consequently, Gibson and Dembo called the first factor personal teaching efficacy (PTE, alpha = 0.75) and the second they called teaching efficacy (GTE, alpha = 0.79) assuming it captured outcome expectancy. (p. 788)

Unlike prior efforts to capture self-efficacy, this scale became widely used. With this use, issues began to develop regarding factor analysis of the scale such as items being loaded on both factors of the scale. Gibson and Dembo removed 14 items, thus changing the scale from 30-items to 16-items. Nine items were considered to be Personal Teaching Efficacy (PTE) while the other 7 were correlated to General Teaching Efficacy (GTE).

Even with the shortened scale, researchers have found issues regarding some of the remaining items. Soodak and Podell (1993) found that one GTE item loaded on the PTE factor and that there was one other item that did not have a load strong enough on either factor to be included on the scale. Other researchers continued to modify the TES. Researchers Hoy and Woolfolk (1993) used an even more abbreviated form with five personal and five general teaching efficacy items. With this version, reliabilities for both subtests were within the range found for the longer versions (alpha of 0.77 for PTE and 0.72 for GTE). They recommend that researchers conduct factor analysis on their own data when using the instrument due to the frequent inconsistencies across studies.

Tschannen-Moran and Woolfolk Hoy (2001) commented that "the lack of clarity about the meaning of the two factors and the instability of the factor structure make this instrument problematic for researchers" (p. 789). This led them to subsequently develop their own model of teacher efficacy and a scale entitled the *Teachers' Sense of Efficacy Scale (TSES)*. In commenting on the measurement of teacher efficacy Tschannen-Moran and Woolfolk Hoy (2001) state:

> One of the unresolved issues in the measurement of teacher efficacy is determining the optimal level of specificity. Teacher efficacy has been defined as both context and subject matter specific. A teacher may feel very competent in one area of study or when working with one kind of student and feel less able in other subjects or with different students. (p. 789)

Prior to the creation of the TSES, several researchers changed the TES to tailor it to their unique needs "recognizing that many standard efficacy instruments overlook the specific teaching context some researchers have modified the Gibson and Dembo

instrument to explore teachers' sense of efficacy within particular curriculum areas" (Tschannen-Moran & Woolfolk Hoy, 2001, p. 790). Three attempts of the Teacher Efficacy Scale modifications are the *Science Teaching Efficacy Belief Instrument*, a second measure that modified the TES to reflect classroom management and discipline, and a modified TES worded specifically for special education teachers.

While unpublished and inaccessible to this researcher, Tschannen-Moran and Woolfolk Hoy (2001) reported that Bandura himself created a teacher self-efficacy scale:

> In the midst of the confusion about how to best measure teacher efficacy, an unpublished measure used by Bandura (undated) in his work on teacher efficacy has begun quietly circulating among researchers. Bandura (1977b) pointed out that teachers' sense of efficacy is not necessarily uniform across the many different types of tasks teachers are asked to perform, or across different subject matter. In response, he constructed a 30-item instrument with seven subscales: efficacy to influence decision making, efficacy to influence school resources, instructional efficacy, disciplinary efficacy, efficacy to enlist community involvement, and efficacy to create a positive school climate. Each item is measured on a 9-point scale anchored with the notations: "nothing, very little, some influence, quite a bit, a great deal." This measure attempted to provide a multifaceted picture of teachers' efficacy beliefs without becoming too narrow or specific. Unfortunately reliability and validity information about the measure have not been available. (p. 791)

While the need to research teacher efficacy has been apparent in the literature, the availability of a scale that produced valid and reliable scores was not as clear. This need

is what prompted Tschannen-Moran and Woolfolk Hoy to begin research on creating a scale to accurately measure teacher efficacy. Their article *Teacher Efficacy: Capturing an Elusive Construct* (2001) provided a more detailed review of each of the scales mentioned above. It also gives insight to issues in measurement:

> The conceptual confusion around the concept of teacher efficacy has made developing appropriate measures of efficacy difficult. Researchers have tried very simple, general measures as well as long complex vignettes. None of the measures currently in use seems to have found the proper balance between specificity and generality. In addition, there are conceptual problems in the interoperation of the factor structure and the poor correlation between the factors where two or more have been found. (p. 792)

Teachers' Sense of Efficacy Scale

The questionnaire used in this study was the *Teachers' Sense of Efficacy Scale (TSES)* long form, a measure of self-efficacy developed by Tschannen-Moran and Woolfolk Hoy (2001). Seven demographic questions were added for additional analysis. The TSES including the additional demographic and open-ended questions were delivered in the form of an online questionnaire. The instrument, developed at Ohio State University, is sometimes referred to as the Ohio State Teacher Efficacy Scale (OSTES). Tschannen-Moran and Woolfolk Hoy (2001) prefer the name, *Teachers' Sense of Efficacy Scale* (TSES). In his *Guide for Constructing Self-Efficacy Scales* (2006b) Albert Bandura suggests using a "nondescript title such as *Appraisal Inventory* rather than *Self-Efficacy*" (p. 314) to minimize possible self-assessment response bias. The TSES was titled "TSES: Teacher Beliefs" as it is on the *Teachers' Sense of Efficacy Scale* (2001).

The TSES long form consists of 24 items and was constructed using a 9-point Likert-type scale. The scale ranges from "Nothing" (1 point) to "Very Little" (3 points) to "Some Influence" (5 points) to "Quite a Bit" (7 points) and "A Great Deal" (9 points). There are three main factors that influence teacher efficacy according to the TSES: efficacy in student engagement, efficacy in instructional strategies, and efficacy in classroom management. While a beginning teacher may have efficacy in one of the three factors, lower efficacy in another factor may influence student achievement. It is important to investigate if significant differences exist between the factors in order for preparation programs to certify efficacious teachers (Wonacott, 2002).

Tschannen-Moran and Woolfolk Hoy (2001) found that the TSES loads consistently on the three moderately correlated factors: efficacy in student engagement, efficacy in instructional strategies, and efficacy in classroom management. Each factor is evaluated by eight items on the 24-item scale. An example item for efficacy in student engagement is "How much can you do to get through to the most difficult students?" Example item for efficacy in instructional strategies reads "How well can you respond to difficult questions from your students? An example item for efficacy in classroom management is "How much can you do to control disruptive behavior in the classroom?"

Although there is a 12-item short form of the scale, the developers recommend using the long form with pre-service teachers. Tschannen-Moran and Woolfolk Hoy (2001) found that the TSES "could be considered reasonably valid and reliable" (p. 801) establishing the construct validity by factor analysis and finding a reliability of the long form at 0.94. The TSES is available at Woolfolk Hoy's web site: http://www.coe.ohiostate.edu/ahoy/researchinstruments.htm.

The TSES was selected as the instrument in this study because it "is superior to previous measures of teacher efficacy in that it has a unified and stable factor structure and assesses a broad range of capabilities that teachers consider important to good teaching, without being so specific as to render it useless for comparisons of teachers across contexts, levels and subjects" (Tschannen-Moran & Woolfolk Hoy, 2001, p. 801). The authors have copyrighted the TSES, however there are no restrictions for its use in scholarly research or non-profit educational purposes (Tschannen-Moran & Woolfolk Hoy, 2001).

As the name of the scale implies, the Teachers' Sense of Efficacy Scale is used to study perceived teacher efficacy. While the aim is the same, the scale has been used to study differences in teacher efficacy in a variety of settings. The TSES was first utilized by the creators of the scale: Tschannen-Moran and Woolfolk Hoy. In research prior to the creation of the scale, Woolfolk and Hoy (1990) found that a teacher's global sense of efficacy is based on three dimensions of teacher efficacy: efficacy in student engagement, efficacy in instructional strategies, and efficacy in classroom management.

Teacher Characteristics and Experiences that May Influence Efficacy

Teacher efficacy is a branch of Bandura's (1977a) self-efficacy theory. Based on this theory, persons will investigate careers in which they believe they can be successful. Studies have shown that students were more interested in a particular career when they had stronger self-efficacy beliefs regarding it (Betz & Hackett, 1981; Branch & Lichtenberg, 1987; Harms & Knobloch, 2005). Prospective teachers who have a high sense of teaching efficacy will be more likely to choose a certification preparation program that will help strengthen their teaching efficacy. While researchers have found

that teacher efficacy does enhance quality teaching, less is known about the factors that influence teacher efficacy beliefs (Laboone, 2004; Tschannen-Moran & Woolfolk Hoy, 2007).

Gender disparities are reflected in career choices (Bandura 1997). Career goals are a result of many different factors such as family influence, educational experience, the media, and general cultural traditions (Hackett & Betz, 1981). An example of this is the traditional career choices of men and women. Fewer women choose scientific, technical, mathematics, and computer science fields than their male counterparts. Traditionally female occupations, such as nursing and teaching, alternatively reflect low male interest. The difference between these examples however, is that men typically feel as if they could be successful in traditionally female careers, but sometimes do not act on desires due to social stigmas. Women however, tend to doubt their ability to be successful in traditionally male careers, possibly due to gender bias they encountered at home and school during their childhood (Bandura, 1997).

Career and Technical Education programs vary within content. Within CTE; agricultural education, technology education, and trade and industrial education are traditionally male dominated fields (Weber & Custer, 2005), whereas family and consumer sciences and health occupations are traditionally female dominated areas of study (Werhan, 2002). Business education and marketing education have higher numbers of women due to more women in the profession, however proportionally the numbers are not skewed to a particular gender.

Other reasons for entering education fields may actually be unrelated to the profession. Women's beliefs in their efficacy to manage work and family demands affect

their career choices (Stickel & Bonett, 1991). Teachers have a schedule that coincides with school-aged children, which sometimes is a factor in deciding to explore the profession. Teachers with high levels of teacher efficacy however, are more invested in teaching than those entering the profession through outside factors such as a convenient schedule (Bandura, 1997).

Self-efficacy is the belief about the future level of competence a person expects he or she will display in a given situation (Bandura, 1997). Tschannen-Moran and Woolfolk Hoy (2001) in further exploration of self-efficacy theory defined teacher efficacy as a teacher's "judgment of his or her capabilities to bring about desired outcomes of student engagement and learning, even among those students who may be difficult or unmotivated" (p. 783).

While demographic variables help establish who is entering and completing teacher certification programs, the literature reveals that gender, ethnicity, and age are not typically predictors of teacher efficacy. Bandura clarifies the reasons why gender is not a good predictor of self-efficacy stating that "it should be noted that the variability with the sexes is often larger than the differences between them...therefore, modal characteristics in efficacy beliefs across sex groups should not be imputed to all members within each sex group" (p. 435). Ethnicity is also not a variable used to compare self-efficacy, Bandura states that "as with sex differences, the differences within ethnic groups are considerably larger than the differences between ethnic groups" (p. 438). In addressing age, Bandura shares that one's age is not a determinant of self-efficacy because the huge variability between age levels also tend to hide more than they reveal (Bandura, 1997).

While neither Bandura's self-efficacy theory nor Tschannen-Moran, Woolfolk Hoy, and Hoy's (1998) model of teacher efficacy relate age, gender, or ethnicity to teacher efficacy; it is interesting that studies regarding teacher efficacy typically ask respondents to report these demographics and look for statistical differences anyway. The literature revealed few studies claiming that gender may have a role in determining teacher efficacy. Feather (1969) found that females were more likely to attribute success to external factors (good or bad luck) than their male counterparts and Garrett (1977) found that females were more likely to attribute success in the classroom to teacher controlled activities. Most current research report that age, gender, and ethnicity do not reflect significant differences in regards to teacher efficacy as Bandura (1997) forecasted. Tschannen-Moran and Woolfolk Hoy (2007) expand on this stating that:

> Demographic variables have typically not been strong predictors of the efficacy beliefs of teachers. These variables were included as controls as there is no theoretical reason to suspect that they would be related to self-efficacy beliefs except possibly the availability of vicarious experiences with similar models in the intended realm of teaching. (p. 9)

Comparing teacher's sense of efficacy based on certification field is also not a good indicator of self-efficacy since the fields of study include separate content which may attract persons with many different background experiences (gender, ethnicity, age as well as different life/work experiences) and as such the variability may be the cause of differences (Bandura, 1997).

Years of teaching experience may possibly influence teacher efficacy. The mastery experience of actually performing a task, such as teaching, does seem to fall

within mastery experiences. Bandura (1997) stressed that mastery experiences are the most influential source of self-efficacy determination. Soodak and Podell (2007) found elementary school teacher efficacy scores to be high during preservice periods then dramatically fall during the first years of teaching. The teacher efficacy scores increased with years of teaching experience. Interestingly they found no significant changes among secondary teachers efficacy regarding the length of teaching. Tschannen-Moran and Woolfolk Hoy (2007) found that beginning teachers had lower teaching efficacy scores than their veteran colleagues stating that "it is also possible that teachers who start their careers with low self-efficacy either tend to find better instructional strategies to improve their teaching performance over time, thus increasing their sense of efficacy and if they do not, they leave the profession" (p. 952).

Traditional and non-traditional comparisons are relevant to the study of teacher efficacy. The four sources of efficacy expectations: mastery experiences, physiological and emotional state, vicarious experiences, and social persuasion influence the decision whether or not to pursue a career in education. Furthermore, experiences within the program may lead to changes in teacher efficacy. The model of teacher efficacy is cyclical in nature, therefore experiences happening during the course of preparing to be a teacher including early field experiences and preparation methods may change one's sense of teaching efficacy (Tschannen-Moran, Woolfolk Hoy, & Hoy, 1998).

Tschannen-Moran and Woolfolk Hoy (2001) suggest that "if the significant effects of teachers' beliefs in their capabilities were taken seriously, it could provoke significant changes in the way teachers were prepared and supported in their early years in the profession" (p. 802). Further research is warranted in order to address needs that

are specific to career and technical education and to identify similarities and differences between CTE traditional and non-traditional program teacher efficacy.

The Teachers' Sense of Efficacy Scale scores comparing traditional and non-traditional teachers can give insight to perceived efficacy and hence ideas of how the teacher will perform in the profession. Teacher efficacy can effect student outcomes as well. Tschannen-Moran and Woolfolk Hoy (2001) stated that "teacher efficacy has proved to be powerfully related to many meaningful educational outcomes such as teachers' persistence, enthusiasm, commitment, and instructional behavior, as well as student outcomes such as achievement, motivation, and self-efficacy beliefs" (p. 783).

Tschannen-Moran and Woolfolk Hoy (2007) stress the need for teacher trainers to study ways to improve the teaching efficacy of future educators:

> Teachers' sense of efficacy is a little idea with big impact. If future research confirms that teachers' self-efficacy beliefs are most malleable early in learning and are resistant to change once set, then it would behoove teacher educators and school leaders to provide pre-service and novice teachers the kinds of supports that would lead to the development of strong, resilient self-efficacy beliefs. (p. 11)

This study answers their call to research by exploring teachers' sense of efficacy in respect to CTE traditional and non-traditional teacher certification graduates.

CHAPTER III

METHOD

This chapter outlines the research methodology that was used to compare career and technical traditional and non-traditional trained educators' teacher efficacy. Topics included are the purpose of the study, research design, participants, instrument, data collection procedure, and data analysis.

Purpose of Study

The purpose of this causal-comparative study was to compare participants certified through two post-baccalaureate career and technical education (CTE) teacher preparation programs (traditional and non-traditional) in terms of the teacher self-efficacy dimensions of student engagement, instructional strategies, and classroom management. These three variables were assessed using the Teachers' Sense of Efficacy scale - long form (TSES; Tschannen-Moran & Woolfolk Hoy, 2001). The TSES is based on Bandura's (1977a, 1977b) theory of self-efficacy and cognitive social learning theory. The impact of years of teaching experience as an independent variable on teacher self-efficacy was examined. Results of this study may add to the existing body of research on self-efficacy, particularly with respect to the teacher efficacy of certified CTE teachers. It also will help to inform CTE teacher preparation practices.

Research Objectives

The specific objectives to be addressed in this study were:

1. To describe teachers who have completed either the traditional or non-traditional post-baccalaureate CTE teacher preparation programs at UGA in terms of age, gender, ethnicity, certification field, and years of teaching experience.
2. To compare the levels of teacher's sense of efficacy subscale areas of student engagement, instructional strategies, and classroom management among teachers who have completed these post-baccalaureate teacher preparation programs (traditional and non-traditional).
3. To compare teachers completing these post-baccalaureate teacher preparation programs (traditional and non-traditional) by years of teaching experience on the teacher's sense of efficacy subscale areas of student engagement, instructional strategies, and classroom management.

Design

This study employed a causal-comparative design. Causal-comparative research designs are used when cause and effect relationships between a categorical independent variable and one or more dependent variables are examined (Fraenkel & Wallen, 2003). This is different from a basic correlational research design where there is one quantitative independent variable and one quantitative dependent variable.

Causal-comparative designs attempt to determine reasons for pre-existing differences in groups or individuals on dependent variables (Schenker & Rumrill, 2004). Much like experimental designs, in order to identify relationships independent variables must be in the form of nominal or ordinal scale categories. Causal-comparative and

experimental research often resemble, however there are differences between the designs in how the variables are organized, displayed, and analyzed. Experimental research deals with randomization within groups. Alternatively, causal-comparative designs study participants because they already belong to pre-established groups (Gall, Gall, & Borg, 2003; Schenker & Rumrill, 2004).

The use of independent variables is another difference between the two types of study. Causal comparative research provides a way of exploring causal relationships in circumstances that do not lend to experimental designs. Studying pre-established groups can be advantageous in terms of cost and time as opposed to experimental studies, however, there are limitations in interpreting the results of this type of study. Since experimental studies involve randomly assigning participants to groups, they can manipulate the independent variable and control for extraneous variables when determining changes in performance, thus allowing researchers to conclude cause-and-effect relationships (Schenker & Rumrill, 2004). Causal-comparative designs do not manipulate the independent variable, observing relationships "between naturally occurring variations in the presumed independent and dependent variables" (Gall et al., 2003, p. 296) and therefore can not "conclude with certainty what effect the independent variable had on the dependent variable" (Schenker & Rumrill, 2004, p. 118).

This is a disadvantage to the experimental design, because the researcher cannot exclude the possibility that other variables not in the study could be the reason for their results. One can only conclude that the groups differ with respect to the independent variable. This restricts the ability to make concrete conclusions regarding the causality of the variation of scores (Gall et al., 2003). Schenker and Rumrill (2004) stress that this

limitation does not imply that the causal-comparative design is not useful. Causal-comparative designs provide a structure to study groups when "it is not possible (or even desirable) to manipulate the independent variable in an effort to make causal connection" (p. 118).

Variables found in the research as possible underlying factors between traditional and non-traditional program participants were included as variables in this study. This was done as an effort to explore differences between the participants from the two programs through quantifying the level of teaching efficacy between the variables along with program type (Moran, 2005; Fraenkel & Wallen, 2001). This research studied three quantitative dependent variables: (a) efficacy in student engagement; (b) efficacy in instructional strategies; and (c) efficacy in classroom management. In addition to type of teacher preparation program (traditional or non-traditional), years of teaching experience was included as a categorical independent variable.

There were several delimitations to consider regarding this study. The participants themselves were from naturally occurring groups of teachers that differed in respect to the type of preparation program they completed for career and technical teacher certification. Studying these groups allowed the ability to determine if the participants have similar or differing levels of self-efficacy in student engagement, instructional strategies, and classroom management. Any differences found in these areas between the self-selected groups could possibly have been caused by some other non-identified reason. It is possible that participants chose the traditional or non-traditional certification preparation program based on undetermined factor(s) not included in this research. Participants have all completed career and technical teacher certification programs and

held at minimum a bachelor's degree at the time of certification, therefore the results are not generalizable beyond these restrictions.

This study examined teacher efficacy of certified CTE teachers as an indicator of quality teaching. In an attempt to ensure quality of the programs was similar, those that were given the opportunity to participate were all program completers from 2005 through 2008, the years that both programs adopted the Georgia Framework for Teaching and modified their curriculum to align with this framework (personal communication, C. Smith & E. Adams, 2008). All participants had previously earned a bachelor's degree and had completed a graduate level traditional or non-traditional certification program at the University of Georgia in the Department of Workforce Education, Leadership, and Social Foundations (WELSF) during the time frame 2005-2008. Courses were similar, as participants would have had the same admissions requirements, course requirements, and professors.

An ex-post facto, or after the fact, design is appropriate because the study was conducted after these teachers completed their respective programs and were already teaching. Parker and Gallivan (2004) state it is more likely the researcher will obtain responses that represent of all sub-groups within the group being studied when conducting research if both groups are well represented. Inviting everyone during this time period to participate in the study allowed both traditional and non-traditional career and technical education certification program participants from different subject areas to be accurately represented. Attempts were made to restrict possible underlying variables, however other factors not addressed in this research may impact the dependent variable,

therefore conclusions made regarding causality of the independent variables to the dependent variable will be limited (Fraenkel & Wallen, 2001; Moran, 2005).

Participants

The population for this study was all career and technical education teachers prepared through a post-baccalaureate level traditional or non-traditional CTE educator preparation program. The convenience sample was all career and technical education teachers who completed teacher certification through a post-baccalaureate level traditional or non-traditional CTE educator preparation program at the University of Georgia Department of Workforce Education from spring 2005 through spring 2008. The convenience sample is further defined as those aforementioned persons who also held at least a baccalaureate degree in a field other than education and were seeking 7-12 grade certification in the CTE education fields of business, family and consumer sciences, health occupations, marketing, or technology and had obtained certification to teach through a teacher a preparation program that required a semester of student teaching or a year long supervised internship in years 2005-2008.

Although some participants in the non-traditional program were not college graduates, participants in the traditional program are required to have a bachelor's degree. Non-degree holding non-traditional program participants were excluded from this study in order to eliminate teacher education level as a source of differences between the participants. All those completing the UGA CTE programs under the above parameters from spring 2005 through spring 2008 were invited to participate. The year 2005 was selected as the start date for this study because that was the first certifying year that both the traditional and non-traditional programs followed the Georgia Framework for

Teaching (2005) guidelines. The Georgia Framework for Educators soon followed defining quality teaching as supporting and improving teaching and learning through the following six areas: Content and Curriculum, Knowledge of Students, Learning Environments, Assessment, Planning and Instruction and Professionalism (2007).

The participants from these two programs during the 2005-2008 time frame had the same professors and similar content backgrounds but were exposed to different instructional delivery methods and field experiences. Everyone who completed certification from the traditional and non-traditional programs during the aforementioned time frame to had an opportunity to participate. Parker and Gallivan (2004) state it is more likely the researcher will obtain responses that represent all sub-groups within the group being studied when conducting research if both groups are well represented. Inviting each UGA Department of Workforce Education students certified from 2005-2008 allows for the opportunity for each sub-group within both programs to be accurately represented. Of the 144 invitations to participate extended, 99 responded to the questionnaire. Of the 99 responders, 16 were not currently teaching leaving 82 participants resulting in a response rate of 56.9%. An alpha level of .05 was used for all analysis.

Program participants were identified through UGA records, which included contact information of the participants at the time of their completion of the program. Internet searches were conducted in an attempt to locate school email addresses of participants in order to send an email survey. When email addresses could not be found, phone calls were made to determine the email address. Contact information was unavailable for two people due to a move out of state and a name change.

Instrument

The questionnaire for this study was the *Teachers' Sense of Efficacy Scale* (TSES) long form, a measure of self-efficacy developed by Tschannen-Moran and Woolfolk Hoy (2001) that is based on Bandura's (1977b) self-efficacy theory. Seven demographic questions were added. The demographic portion of the questionnaire asked the participants to report if they are currently teaching, their program type (traditional or non-traditional), certification field, gender, age, ethnicity, number of years work experience outside of education, and number of years teaching experience.

The TSES including the additional demographic questions were in the form of an online questionnaire. The instrument, developed at Ohio State University, is sometimes referred to as the Ohio State Teacher Efficacy Scale (OSTES). Tschannen-Moran and Woolfolk Hoy (2001) prefer the name, Teachers' Sense of Efficacy Scale (TSES). In his *Guide for Constructing Self-Efficacy Scales* Albert Bandura (2006b) suggests using a nondescript title rather than self-efficacy to minimize possible self-assessment response bias. The title on the TSES questionnaire (2001) is *Teacher Beliefs* and therefore is in alignment with Bandura's suggestion.

The TSES long form consists of 24 items and was constructed using a 9-point Likert-type scale. The scale ranges from "Nothing" (1 point) to "Very Little" (3 points) to "Some Influence" (5 points) to "Quite a Bit" (7 points) and "A Great Deal" (9 points). Tschannen-Moran and Woolfolk Hoy found that the TSES loads consistently on three moderately correlated factors: Efficacy in Student Engagement, Efficacy in Instructional Strategies and Efficacy in Classroom Management. Each factor is evaluated by eight items on the 24-item scale. An example item for Efficacy in Student Engagement is

"How much can you do to get through to the most difficult students?" Example item for Efficacy in Instructional Strategies reads "How well can you respond to difficult questions from your students? An example item for Efficacy in Classroom Management is "How much can you do to control disruptive behavior in the classroom?"

Although there is a 12-item short form of the scale, the developers recommend using the long form with pre-service teachers. Tschannen-Moran and Woolfolk Hoy (2001) found that the TSES "could be considered reasonably valid and reliable" (p. 801) establishing the construct validity by factor analysis and finding a reliability of the long form at 0.94. The TSES is available at Woolfolk Hoy's web site: http://www.coe.ohio-state.edu/ahoy/researchinstruments.htm. The TSES was selected as the instrument in this study because it "is superior to previous measures of teacher efficacy in that it has a unified and stable factor structure and assesses a broad range of capabilities that teachers consider important to good teaching, without being so specific as to render it useless for comparisons of teachers across contexts, levels and subjects" (Tschannen-Moran & Woolfolk Hoy, 2001, p. 801). The authors have copyrighted the TSES, however there are no restrictions for its use in scholarly research or non-profit educational purposes (2001).

Validity and Reliability of the Teachers' Sense of Efficacy Scale (TSES)

When determining the instrument to be used in this study, a review of the literature and search for instruments to measure a teacher's sense of efficacy was conducted as suggested by Dillman (2007). Hill (2001) also recommends that researchers consider using an instrument that already exists if prior studies using the instrument have produced valid and reliable scores. While attention is given to address the validity and

reliability of new instruments, it is also important to address these issues when using established scales (Hill, 2001; Rojewski, 2001).

Validity addresses the scores of the instrument to determine if it accurately measures what it is intends to measure (Gall et al., 2003; Hill, 2001; Rojewski, 2001). There are different uses of validity within research. Validity can be in reference to a measurement instrument or related to a complete study. Gloeckner et al. (2001) clarify these differences. Measurement validity is "an evaluation of scores on a particular test with a particular type of participants and how these scores will be interpreted" (p. 226). Thus, measurement validity investigates if the scores measure what they are intended to measure. Research validity relates to the entire study and determines if "results of the study are accurate and generalizable" (p. 255).

Other factors relating to the validity of a study are internal and external validity. Internal validity examines if the independent variable is making the dependent vary or if other factors influenced any change. External validity is associated with the ability to generalize the results of a study. When addressing measurement validity the researcher should look "at the quality of a measuring instrument and whether that instrument is measuring what the researcher thinks the instrument is measuring" (Gloeckner et al., 2001, p.226).

There are four types of instrument validity: face validity, content validity, criterion validity, and construct validity. Face validity is simply when the items on an instrument appear to have validity. While not recognized by most researchers to be enough evidence that the measurement is valid, face validity is normally used in the early stages of planning for a study. When determining the proper scale to use, researchers

typically look at measurements used in other studies while searching for an appropriate scale to use.

As its name implies, content validity addresses the content of a instrument in order to ensure that all aspects of any constructs in the study are represented in appropriate proportions (Gloeckner et al., 2001). An instrument's content should tie directly into the particular theory it serves. They inform that no good statistical measurement for content validity exists, and as with face validity, it is typically based on the judgment of researchers.

Criterion validity refers to validating an instrument against a measurable external criterion (Gloeckner et al., 2001). There are two ways to establish criterion validity evidence: predictive evidence and concurrent evidence. Predictive evidence is used when the researcher is trying to determine how participants will do on a specific instrument in the future. In instances where it is either not possible due to expense or length of time to wait between when the predictor test and criterion measurement, concurrent evidence is used to examine the instrument scores.

Construct validity is used to determine if the variables in a study that are predicted to be related to constructs that the study is based on actually are related. When construct validity is related to the scores of an instrument, the items on the instrument must be connected to theory regarding the subject matter. The construct for this study is teacher efficacy. In order to determine construct validity, the researcher would examine if the variables in the study accurately measure teacher efficacy. Also the researcher must explore if the scores from the items on the instrument tie into theory. There are three

types of evidence to construct validity: convergent evidence, discriminant evidence, and factorial evidence.

Reliability addresses if the instrument produces consistent measurements over time. Scores can be reliable while not being valid, however, if the scores are valid than they have to be reliable (Gall et al., 2003). There are four main ways researchers determine instrument reliability: test-retest, parallel forms, internal consistency, and interrater tests of reliability. Daniel and Witta (1997) claim that Cronbach's alpha, a type of internal consistency reliability, is the most used method of determining reliability mainly because it can be performed using data from the study in question. Gloeckner et al. (2001) suggest calculating Cronbach's alpha when using a Likert type scale such as the TSES. They also offer that statements of reliability "must specify the type of reliability, strength of the reliability coefficient, and population used" (p. 243). While the reliability for an established scale is usually published, researchers need to address their own scores reliability as well.

The TSES has been used in previous studies producing valid and reliable scores (Harms & Knobloch, 2005; Murshidi et al., 2006; Tschannen-Moran & Woolfolk Hoy, 2001). Hill (2001) suggests that regardless if the instrument is established, the researcher should describe how content validity, criterion validity, and construct validity have been addressed since the issue of validity is related to the scores from the instrument rather than the instrument itself.

As suggested by Dillman (2000), a panel of experts were asked to review the instrument to determine content and face validity. They also tested the ease of use and working condition of the instrument by taking it online (Dillman, 2007). The pilot test

group consisted of four University of Georgia Department of Workforce Education professors and four CTE teachers that had taken courses in the department but were not part of the population for the study. Each has had prior experience with instrument development. The pilot group was asked to complete the online questionnaire, to identify any portions of the questionnaire that was hard to understand, and to provide feedback with suggestions for improvements or changes to the questionnaire. Responses from the pilot group were downloaded and checked to ensure responses could export into the SAS software and that the questions were coded correctly.

Researchers (Gall et al., 2003; Gloeckner et al., 2001) recommend using the coefficient alpha as a measurement of internal consistency in order to compute reliability. Tschannen-Moran and Woolfolk Hoy (2001) provided an estimate of 0.94 global reliability and factor reliabilities of .87 for student engagement .91 for instructional strategies, and .90 for classroom management. The TSES scores for this study were tested for internal reliability. A post hoc reliability analysis of the scores from the participants was calculated using Cronbach's alpha method. The scores also resulted in a high global reliability of .95 and high factor reliabilities of .89 for student engagement, .86 for instructional strategies, and .93 for classroom management.

Procedure

Application for approval of research with human research participants was submitted and approved by the University of Georgia Office of the Vice President for Research Institutional Review Board (IRB). A list of the teachers that completed the CTE traditional and non-traditional programs at UGA from spring 2005 through spring

2008 were obtained from the University of Georgia Department of Workforce Education records.

Data was collected for this study using a web-based questionnaire as outlined by the Dillman Tailored Design Method (2007). The Dillman Tailored Design Method (2007) is a revision of the Dillman Tailored Design Method (2000) and Dillman Total Design Method (1978) and adds the flexibility of using a variety of data collection procedures, including web-based instruments.

The collection of data from the traditional and non-traditional programs took place from September 16, 2008 to October 3, 2008. The initial invitation (see Appendix B) was sent on September 16, 2008. A follow up email (see Appendix C) was sent on September 22, 2008 to persons that did not attempt or complete the questionnaire. A third email identical to the second was sent to those that had not submitted the questionnaire by September 25, 2008. A final email was sent on September 29, 2008 requesting participation. Each invitation to participate in the study included an offer to send a printed copy of the questionnaire.

As suggested by Dillman (2007), participants received an email with an invitation to participate and hyperlink to the online questionnaire. When clicked, the hyperlink took participants to a introduction cover page to the questionnaire which included a brief overview of the purpose of the study, all items of consent as requested by the University of Georgia IRB, along with written instructions on how to complete the questionnaire (see Appendix D). Placing the consent letter as page one of the questionnaire allowed the researcher to contact potential participants through brief email invitations on different occasions while ensuring that once the potential participant choose to click the hyperlink

to the questionnaire they would have the opportunity to read and consent to participate in the study directly before beginning the questionnaire. All participants were over the age of 18. Upon completion of the questionnaire the participant was asked to click the "submit" button which saved the questionnaire results into a protected database supported by the company Hosted Survey. Results were immediately available to the researcher. Data was downloaded from the Hosted Survey WebPages into an excel spreadsheet and Statistical Analysis Software (SAS) version 9.1 computer software for data analysis.

The web-based questionnaire for this study contained the same content as a paper version along with additional demographic questions. Although there was no difference in actual verbiage; the delivery, process of how participants answer and data collection are quite different. Conducting the mailed questionnaires would require a pre-notification mail-out, printing, folding, then stuffing and stamping of envelopes. The respondent would fill out the questionnaire with a pen or pencil, place it back in the envelope provided by the researcher, and then send it back to the researcher. There would be a wait time for mail delivery and the researcher would hand enter or scan (if using a scantron sheet) each questionnaire response, and then check that the data was entered correctly. This process is time consuming and can be quite costly (Dillman, 2000).

Web-based questionnaires help alleviate the aforementioned issues associated with paper questionnaires. Web questionnaires are an extremely promising method of data collection (Schillewaert, Langerak, & Duhamel, 1998). Whitte, Amoroso, and Howard (2000) agree that while Internet research is a newer form of collecting data, it could potentially become commonplace. Young and Ross (2000) claim that the use of the

Internet to collect data may be one of the most profound developments in survey research. Couper (2000) informs that there is speculation that Web surveys will replace traditional methods of data collection. Dillman and Bowker (2001) stated that data that had once been collected by other survey modes is now being collected with Web surveys.

Advantages of web-based questionnaires include a short time frame for the collection of responses, protection against the loss of data, easy transfer of data into a database for analysis, time and cost savings for the researcher and connivance for the respondent (Carbonaro & Bainbridge, 2000; Schillewaert et al., 1998). There is the possibility of a potentially higher response rate, although it is not uniformly agreed upon by researchers (Matz, 1999).

While the content is the same between web and paper questionnaires, there are differences in presentation. Web instruments have the ability to display the whole page or have respondent answer one question at a time. They also allow for the option to require the applicant to answer all questions, leaving no room for missing items (Carbonaro & Bainbridge, 2000; Schillewaert et al., 1998).

Possible disadvantages in conducting web-based questionnaires generally include the potentially nonrandom nature of the sample, unavailability of population lists, computer access to the survey, and various technology-related issues. Additional limitations include the inability to clearly define the population, lack of technological familiarity on the part of the respondents or their willingness to use a computer to complete the survey, the potential for being able to identify respondents, and browser incompatibility problems (Carbonaro & Bainbridge, 2000; Schillewaert et al., 1998).

The questionnaire must be as easy as possible for all responders (Carbonaro & Bainbridge, 2000). They claim the more difficult it is to complete the survey the lower the response rate. Also the web-based questionnaire must be designed so that respondents are able to complete it online with similar ease of a traditional paper version. Completion of the questionnaire must require only minimal computer skills. Incorporating security measures help ease the mind of the respondent while also maintaining the accuracy of the data.

While the disadvantages mentioned previously may pose a problem for some researchers, for the purpose of this study they are minimal. All participants in this study have previously enrolled in a career and technical teacher preparation program at the University of Georgia and are required to use computers to access email and turn in word processed assignments. Therefore, the researcher is confident that they are knowledgeable in basic computer functions such as opening an email and point-and-click mouse operations. The participants will also be teaching in a school and will each have access to a computer with working and compatible web access. Finally, they can ask for the researcher to assist them in any technical problem that may arise by calling or emailing. As mentioned previously in this chapter, the instrument was fully operational having been previously pilot tested.

To place the questionnaire on the Internet, a free account was opened with Hosted Survey at the URL address http://www.hostedsurvey.com and input the questions as well as coding. The Internet URL address of the survey was not accessible through any search engine. Email invitations containing a hypertext link to the survey were created in advance of the data collection. Hosted Survey was able to inform the researcher who has

and has not answered the questionnaire. This allowed the researcher to contact those who did not answer the questionnaire to remind them to respond. Each participant's account was marked by Hosted Survey to ensure that they only complete the questionnaire once.

Since the questionnaire is short, it listed questions on one page. The questions could be answered in any order. IRB requires that the questionnaire either allow the ability to skip questions or add a response stating "I choose not to answer the question." The online survey included the option "I choose not to answer this question" on the likert scale questions to allow the survey to prompt the participant if they skip a TSES question before submission. Due to IRB requirements, demographic questions were optional and did not require a question to be answered before submission.

Data Analysis

This research examined the relationship between traditional and non-traditional certified CTE teachers and self-efficacy. Years of teaching experience was also investigated by program type among the three factors of self-efficacy (student engagement, instructional strategies, and classroom management). Data analysis was conducted using the Statistical Analysis Software (SAS) version 9.1. The analysis began with descriptive tables. One-way analysis of variance (ANOVA) was used to determine if there was a statistically significant difference between program type and the three teacher efficacy subscales. Two-way ANOVA analysis compared years of teaching experience by program type among the dependent variables using an alpha level of .05.

The analysis of variance (ANOVA) statistic allows the researcher to test hypotheses about the mean of a dependent variable across different groups. Analysis of variance (ANOVA) is defined as “a procedure for determining whether the difference

between the mean scores of two or more groups on a dependent variable is statistically significant" (Gall et al., 2003, p.618). A t-test is used to compare the means between two groups, however, a two-way ANOVA can be used to compare two groups on their scores while controlling for a possible extraneous independent variable. Therefore using a two-way ANOVA is most appropriate in this study when comparing program type and years of teaching experience on the three dependent variables. The purpose of using an ANOVA is to determine if each independent variable have a statistically significant relationship with the dependent variable by investigating the means (2003).

It is common for causal-comparative research designs to use ANOVA statistics (Schenker & Rumrill, 2004). The two-way ANOVA is also referred to as a two factor ANOVA (2004). Factors are the independent variables, and are each measured on a categorical scale. In a categorical scale, the levels of the independent variable must define separate groups. A level in ANOVA is the number of categories within the factor being studied. Assumptions in order to use ANOVA analysis are that the population must have a normal distribution, the samples must be independent from each other, and each population must have the same variance (Gall et al., 2003).

Levene's test would be used to determine if there are equal variances to determine which row to look at on the ANOVA table. The ANOVA test procedure produces an F-statistic, which is used to calculate the p-value. As with the t-test, if $p < .05$, the null hypothesis would be rejected. This would conclude that the average of the dependent variable is not the same for all groups. Conversely, if the $p > .05$, this researcher would accept the null hypotheses, concluding that the average of the TSES scores is the same for all groups.

Treatment of Independent Variables

The independent variables (preparation program and years of teaching experience), were treated as categorical variables.

Preparation program. The preparation program variable had two factors: (a) non-traditional (coded 1); and, (b) traditional program (coded 2). Of respondents that are included within the parameters of the study, 35 completed the traditional CTE program and 47 completed the non-traditional program.

Years of teaching experience. The literature surrounding work experience defines an experienced worker as someone that has three or more years of work experience (Cleveland & Hyatt, 2002; Cohen, 1991; Dreher & Ryan, 2002; Moran, 2005; Schaefer & Moos, 1993; Wright, 2001). While this variable describes non-teaching work experience, the definition is in alignment with the definition within the teaching profession, as teachers with more than three years of teaching experience are considered veteran teachers (Georgia Professional Standards Commission, n. d.). This study therefore used two levels of non-teaching occupational experience: (a) 3 years or less; and, (b) 4 or more years. Of the study participants, 36 had three years or less of non-teaching occupational experience and 46 had more than three years of such experience. Of the 36 participants with three years or less experience, 21 were traditionally certified and 15 were non-traditionally certified. Of the 46 participants with more than three years experience, 14 were traditionally certified and 32 were non-traditional.

Since those with the most work experience are typically older and tend to obtain certification through non-traditional programs (Ruhland & Bremer, 2004) any differences found in teacher efficacy between the traditional and non-traditional groups regarding

teaching experience could possibly also be attributed from other factors, such as age, and therefore the variability between background experiences could be the root cause of any differences (Bandura, 1997). In order to compare career and technical educators prepared through traditional and non-traditional routes, the population of this study was restricted to graduate level traditional and non-traditional teachers. The data analysis for this study is summarized in Table 1.

Summary

In order to better prepare career and technical education teachers, this study sought to determine to what extent there is a difference in perceived teachers' sense of efficacy along the dimensions of efficacy in student engagement, efficacy in instructional strategies, and efficacy in classroom management between traditional and non-traditional trained CTE teachers. Traditionally and non-traditionally trained teachers' ratings of perceived self-efficacy as measured by the Teachers' Sense of Efficacy scale - long form (TSES; Tschannen-Moran & Woolfolk Hoy, 2001) were used to describe and compare the two groups on efficacy in instructional strategies, efficacy in classroom management and efficacy in student engagement. This study will add to existing literature regarding teacher self-efficacy that may assist teacher preparation program reform efforts.

Table 1

Data Analysis

Question	Demographic Information/ Independent Variables	Dependent Variables	Analysis
Question 1: Describe program completers	Demographic Information: Preparation Program Categorical: • Non-traditional coded 1, • Traditional coded 2, • Undergraduate program coded 3 (undergraduates were excluded from this study) Age Continuous Gender Categorical: • Male coded 1, • Female coded 2 Ethnicity Categorical: • African American coded 1, • American Indian/Alaskan Native coded 2, • Asian/Pacific Islander coded 3, • Caucasian coded 4, • Hispanic coded 5, • Ethnicity not listed coded 6 Certification Field Categorical: • Business Education coded 1, • Family & Consumer Science coded 2, • Health Occupations coded 3, • Marketing Education coded 4, • Technology Education coded 5, • Trade and Industrial Education coded 6 Years of teaching experience Continuous		Descriptive statistics (mean, standard deviation, sample distribution)
Question 2: Describe program completers	Preparation program Categorical: • Non-traditional coded 1, • Traditional coded 2, • Undergraduate program coded 3 (undergraduates were excluded from this study)	Efficacy in... Student engagement Instructional strategies Classroom management	ANOVA ANOVA ANOVA
Question 3: Compare program completers	Preparation program Categorical: • Non-traditional coded 1, • Traditional coded 2, • Undergraduate program coded 3 (undergraduates were excluded from this study) Length of Teaching Experience Categorical: • 0 - 3 years coded 1, • 4 or more years coded 2	Efficacy in... Student engagement Instructional strategies Classroom management	Two-way ANOVA Two-way ANOVA Two-way ANOVA

CHAPTER IV

RESULTS

The purpose of this causal-comparative study was to compare participants certified through two post-baccalaureate career and technical education (CTE) teacher preparation programs (traditional and non-traditional) in terms of the teacher self-efficacy dimensions of student engagement, instructional strategies, and classroom management. These three variables were assessed using the Teachers' Sense of Efficacy scale - long form (TSES; Tschannen-Moran & Woolfolk Hoy, 2001). The TSES is based on Bandura's (1977a, 1977b) theory of self-efficacy and cognitive social learning theory. The impact of years of teaching experience as an independent variable on teacher self-efficacy was examined. Results of this study may add to the existing body of research on self-efficacy, particularly with respect to the teacher efficacy of certified CTE teachers. It also will help to inform CTE teacher preparation practices. Results are presented in this chapter.

Analysis of Research Objectives

Research Objective One

Research objective one was to describe teachers who have completed either the traditional or non-traditional post-baccalaureate CTE teacher preparation programs at UGA in terms of gender, ethnicity, certification field, age and years of teaching experience.

Of the 144 invitations to participate extended, 99 responded to the questionnaire. One respondent that indicated they were an undergraduate was excluded from the study. Sixteen responders were not currently teaching at the time of the study. Usable responses consisted of 82 participants currently teaching resulting in a response rate of 56.9%. The first question asked "Are you currently teaching within grades K-12 in a public or private school? (If you are not currently teaching K-12, have left the teaching profession or are working in a non-teaching education position please select no)." The online questionnaire skipped the TSES (Tschannen-Moran & Woolfolk Hoy, 2001) scale for non-teaching respondents and asked those not currently teaching demographic questions only. The 82 currently teaching respondents had the opportunity to answer both the TSES items and demographic questions.

Sixteen respondents, six non-traditional and 10 traditional, answered "no" to question one indicating that they are not currently teaching. Of the six non-traditional participants that were not currently teaching at the time of the questionnaire, one was male and five were female. Two of the non-traditional participants were African American and four were Caucasian. As for certification field, four of the six were business education certified while two were marketing education certified. Ages of the non-traditional participants that were not teaching at the time of the study ranged from 26 to 39, with a median age of 30 and mean age of 32 (SD = 5.6). Years of teaching experience of the non-traditional participants not currently teaching at the time of the study ranged from three to four, with a median teaching experience of four years and mean years of teaching experience 3.67 (SD = 0.52).

There were 10 participants in the study that reported they attended the traditional certification program but were not currently teaching. From this group four were male and six were female. Three of the traditional non-teaching participants were African American and seven were Caucasian. Nine of the ten were business education certified and one was marketing education certified. Ages of the traditional participants that were not teaching at the time of the study ranged from 28 to 58, with a median age of 34 and mean age of 41 (SD = 11.8). Years of teaching experience of the traditional participants not currently teaching at the time of the study ranged from zero to 25, with a median teaching experience of zero years and mean years of teaching experience of 3.10 (SD = 7.77).

This study measured the teacher efficacy for current CTE educators, therefore analysis of efficacy in student engagement, instructional strategies, and classroom management was preformed only on those currently teaching. Of the total 99 respondents, the one undergraduate and sixteen non-teaching respondents were not asked the likert scale items, leaving the analysis of Teachers Sense of Efficacy subscales (TSES; Tschannen-Moran & Woolfolk Hoy, 2001) to 82 respondents. Demographic information for the 82 teachers who responded to the TSES scale is presented in Tables 2-4.

Table 2

Demographic Data of Respondents Currently Teaching

	Non-Traditional n = 47		Traditional n = 35	
	n	Percentage	n	Percentage
Gender				
Male	9	19	13	37
Female	38	81	22	63
Ethnicity				
African American	9	19	9	26
American Indian/Alaskan Native	0	0	0	0
Asian/Pacific Islander	0	0	1	3
Caucasian	37	79	24	68
Hispanic	0	0	0	0
Ethnicity Not Listed	1	2	1	3
Certification Field				
Business Education	19	40	22	63
Family & Consumer Science	10	21	4	11
Health Occupations	6	13	1	3
Marketing Education	7	15	3	9
Technology Education	5	11	4	11
Trade and Industrial Education	0	0	1	3
Years of Teaching Experience				
0-3	15	32	21	60
4 or more	32	68	14	40

Table 3

Demographic Information of Respondents Currently Teaching by Age

	N	Mean	Median	SD	Min	Max
Non-traditional	47	38	36	10.4	24	61
Traditional	35	37	36	8.8	26	53

Table 4

Demographic Information of Respondents Currently Teaching by Years of Teaching Experience

	N	Mean	Median	SD	Min	Max
Non-traditional	47	4.66	5.00	2.47	1	17
Traditional	35	4.09	3.00	3.82	1	24

Of the 47 non-traditional participants that were currently teaching at the time of the questionnaire, nine were male and 38 were female. Thirty-seven of the non-traditional participants were Caucasian, nine were African American and one participant's ethnicity was not listed. As for certification field, 19 of the 47 were business education certified, 10 were Family and Consumer Science certified, seven were marketing education certified, six were Health Occupations certified, and five were Technology education certified.

Ages of the 47 non-traditional participants that were teaching at the time of the study ranged from 24 to 61, with a median age of 36 and mean age of 38 (SD = 10.4). Years of teaching experience of the non-traditional participants not currently teaching at the time of the study ranged from one to 17, with a median teaching experience of five years and mean years of teaching experience 4.66 (SD = 2.47).

There were 35 participants in the study that reported they attended the traditional certification program and were currently teaching. From this group 13 were male and 22 were female. Twenty-four of the traditional participants were Caucasian, nine were African American, one was an Asian/Pacific Islander and one participant's ethnicity was

not listed. As for certification field, 22 of the 35 were business education certified, four were Family and Consumer Science certified, four were Technology certified, three were marketing education certified, one was Health Occupations certified and one was Trade and Industry certified.

Ages of the 35 traditional participants that were teaching at the time of the study ranged from 26 to 53, with a median age of 36 and mean age of 37 (SD = 8.8). Years of teaching experience of the traditional participants currently teaching at the time of the study ranged from one to 24, with a median teaching experience of three years and mean years of teaching experience of 4.09 (SD = 3.82).

Research Objective Two

To compare the levels of teacher's sense of efficacy subscale areas of student engagement, instructional strategies, and classroom management among teachers who have completed these post-baccalaureate teacher preparation programs (traditional and non-traditional).

The TSES long form consists of 24 items and was constructed using a 9-point Likert-type scale. The scale ranges from "Nothing" (1 point) to "Very Little" (3 points) to "Some Influence" (5 points) to "Quite a Bit" (7 points) and "A Great Deal" (9 points). Student engagement represented eight questions on the TSES, specifically scale items 1, 2, 4, 6, 9, 12, 14, and 22. The questions on the TSES are in a likert scale format that range from one to nine. The overall mean score for both groups was 54.10 (SD = 8.447) out of a possible 72 total points. Creators of the Teachers' Sense of Efficacy Scale, Tschannen-Moran and Woolfolk Hoy (2001) have established that a score in this range indicates "quite a bit" of efficacy in the area of student engagement.

The mean scores for each program regarding the student engagement subscale are shown in Table 5. The non-traditional program participants had the highest mean score of 54.26 (SD = 8.09), out of a possible 72 total points. The traditional program participants had a slightly lower mean score of 53.89 (SD = 9.02) out of a possible 72 total points. Scores from both groups indicate that while they have some room for improvement, they have "quite a bit" of efficacy in the area of student engagement (Tschannen-Moran & Woolfolk Hoy, 2001). Results of the ANOVA analysis, F (1, 80) = 0.04, p = 0.8460, indicate that the mean differences among the TSES student engagement subset scores for program type were not significant at alpha = .05.

Table 5

Analysis of Variance With Self-Efficacy in Student Engagement, Instructional Strategies, and Classroom Management as the Dependent Variables based on Type of Program as the Independent Variable

	Independent Variable Type of Program							
	Non-Traditional			Traditional				
Dependent Variables	N	Mean	SD	N	Mean	SD	F	p
Student Engagement	47	54.26	8.09	35	53.89	9.02	0.04	0.8460
Instructional Strategies	47	59.79	7.20	35	58.54	7.74	0.56	0.8460
Classroom Management	47	60.98	9.03	35	59.80	10.03	0.31	0.5788

A one-way analysis of variance (ANOVA) was used to determine whether a statistically significant difference existed between scores from the non-traditional and traditional program participants and their ratings on the instructional strategies subscale

of the Teachers' Sense of Efficacy Scale (TSES, Tschannen-Moran & Woolfolk Hoy, 2001). Instructional strategies represented eight questions on the TSES, specifically scale items 7, 10, 11, 17, 18, 20, 23, and 24. The questions on the TSES are in a likert scale format that range from one to nine, with one representing no efficacy at all and nine representing a great deal of efficacy. The overall mean score for both groups was 59.26 (SD = 7.417) out of a possible 72 total points. Creators of the Teachers' Sense of Efficacy Scale, Tschannen-Moran and Woolfolk Hoy (2001) have established that a score in this range indicates they are between "quite a bit" and "a great deal" of efficacy in the area of instructional strategies.

The mean scores for each program regarding the instructional strategies subscale are shown in Table 5. The non-traditional program participants had the highest mean score of 59.79 (SD = 7.20) out of a possible 72 total points. The traditional program participants had a slightly lower mean score of 58.54 (SD = 7.74) out of a possible 72 total points. Scores from both groups indicate that while they have some room for improvement, they are considered between "quite a bit" and "a great deal" of efficacy in the area of instructional strategies (Tschannen-Moran & Woolfolk Hoy, 2001). Results of the ANOVA analysis, $F(1, 80) = 0.56$, $p = 0.8460$, indicate that the mean differences among the TSES instructional strategies subset scores for program type were not significant at alpha = .05.

A one-way analysis of variance (ANOVA) was used to determine whether a statistically significant difference existed between scores from the non-traditional and traditional program participants and their ratings on the classroom management subscale of the Teachers' Sense of Efficacy Scale (TSES, Tschannen-Moran & Woolfolk Hoy,

2001). Classroom management represented eight questions on the TSES, specifically scale items 3, 5, 8, 13, 15, 16, 19, and 21. The questions on the TSES are in a likert scale format that range from one to nine, with one representing no efficacy at all and nine representing a great deal of efficacy. Classroom management total score results are shown in Table 5. The overall mean score for both groups was 60.48 (SD = 9.43) out of a possible 72 total points. Creators of the Teachers' Sense of Efficacy Scale, Tschannen-Moran and Woolfolk Hoy (2001) have established that a score in this range indicates they are between "quite a bit" and "a great deal" of efficacy in the area of classroom management.

The mean scores for each program regarding the classroom management subscale are shown in Table 5. The non-traditional program participants had the highest mean score of 60.98 (SD = 9.03) out of a possible 72 points. The traditional program participants had a slightly lower mean score of 59.80 (SD = 10.03) out of a possible 72 total points. Scores from both groups indicate that while they have some room for improvement, they are considered between "quite a bit" and "a great deal" of efficacy in the area of classroom management. Results of the ANOVA analysis, $F(1, 80) = 0.31$, $p = 0.5788$, indicate that the mean differences among the TSES classroom management subset scores for program type were not significant at alpha = .05.

Research Objective Three

To compare teachers completing these post-baccalaureate teacher preparation programs (traditional and non-traditional) by years of teaching experience on the teacher's sense of efficacy subscale areas of student engagement, instructional strategies, and classroom management.

Three two-way analyses of variance were conducted to explore the interaction between program type (non-traditional and traditional) and years of teaching experience (zero to three years and four+ years) on teachers' sense of efficacy in the areas of student engagement, instructional strategies, and classroom management. An alpha level of .05 was used for all statistical tests (Gall, Gall, & Borg, 2003).

As seen in Table 6, the interaction between program type (non-traditional and traditional) and years of teaching experience (0-3 and 4+ years) on the TSES (Tschannen-Moran & Woolfolk Hoy, 2001) subscale of student engagement was not statistically significant at $F(1, 78) = 0.02$, $p = 0.8925$. Since this interaction was not significant both of the main effects were interpreted separately.

The main effect for years of teaching experience (0-3 and 4+ years) was not statistically significant at $F(1, 78) = 0.01$, $p = 0.9378$. The main effect for program type (traditional and non-traditional) was not statistically significant. Analysis in Question 2 previously determined that program type (traditional and non-traditional) was also not statistically significant at $F(1, 80) = 0.04$, $p = 0.8460$.

Table 6

Two-Way Analysis of Variance for Student Engagement Interaction between Program Type and Years of Teaching Experience

	Type of Program							
	Non-Traditional			Traditional				
Years of Teaching	N	Mean	SD	N	Mean	SD	F	p
0-3 years	15	54.33	8.19	21	53.71	8.97	0.02	0.8925
4+ years	32	54.22	8.17	14	54.14	9.43		

The interaction between program type (non-traditional and traditional) and years of teaching experience (0-3 and 4+ years) on the TSES (Tschannen-Moran & Woolfolk Hoy, 2001) subscale of instructional strategies was not statistically significant at $F(1, 78) = 1.09$, $p = 0.2989$. Results are shown in Table 7. Since this interaction was not significant both of the main effects were interpreted separately. The main effect for years of teaching experience (0-3 and 4+ years) was not statistically significant at $F(1, 78) = 0.02$, $p = 0.2989$. Analysis in Question 2 previously determined that program type (traditional and non-traditional) was also not statistically significant at $F(1, 80) = 0.56$, $p = 0.8460$.

Table 7

Two-Way Analysis of Variance for Instructional Strategies Interaction between Program Type and Years of Teaching Experience

	Type of Program							
	Non-Traditional			Traditional				
Years of teaching	N	Mean	SD	N	Mean	SD	F	p
0-3	15	58.73	6.98	21	59.38	7.81	1.09	0.2989
4+	32	60.28	7.36	14	57.29	7.76		

The interaction between program type (non-traditional and traditional) and years of teaching experience (0-3 and 4+ years) on the TSES (Tschannen-Moran & Woolfolk Hoy, 2001) subscale of classroom management was not statistically significant at

F (1, 78) = 0.91, p = 0.3442. Results are shown in Table 8. Since this interaction was not significant both of the main effects were interpreted separately. The main effect for years of teaching experience (0-3 and 4+ years) was not statistically significant at F (1, 78) = 0.00, p = 0.9555. Analysis in Question 2 previously determined that program type (traditional and non-traditional) was also not statistically significant at F (1, 80) = 0.31, p = 0.5788.

Table 8

Two-Way Analysis of Variance for Classroom Management Interaction between Program Type and Years of Teaching Experience

	Type of Program							
	Non-Traditional			Traditional				
Years of Teaching	N	Mean	SD	N	Mean	SD	F	p
0-3	15	62.33	7.48	21	58.91	11.47	0.91	0.3442
4+	32	60.34	9.72	14	61.14	7.58		

Summary

Of the 99 that participated in the study, 16 were not currently teaching K-12 at the time of the study. Of those that left teaching eight reported that they remain in education. Usable responses consisted of 82 participants currently teaching resulting in a response rate of 56.9%. The majority of the respondents from both programs were female. Most were of Caucasian or African American ethnicity. The majority of the respondents reported that they are business education certified. Ages of the non-traditional participants ranged from 24 to 61 years with a median age of 36, while the traditional

participants ages ranged from 26 to 53 years with a median age of 36. Regarding of years of teaching experience, the non-traditional participants ranged from one to 17 years, with a median teaching experience of five years, the teaching experience of the traditional participants ranged from one to 24 years with a median teaching experience of three years.

The TSES (Tschannen-Moran & Woolfolk Hoy, 2001) long form consists of 24 items and was constructed using a 9-point Likert-type scale. The scale ranges from "Nothing" (1 point) to "Very Little" (3 points) to "Some Influence" (5 points) to "Quite a Bit" (7 points) and "A Great Deal" (9 points). Tschannen-Moran and Woolfolk Hoy found that the TSES loads consistently on three moderately correlated factors: Efficacy in Student Engagement, Efficacy in Instructional Strategies and Efficacy in Classroom Management. Each factor is evaluated by eight items on the 24-item scale.

The results of this study revealed no significant differences in the student engagement, instructional strategies, or classroom management teacher efficacy subscales based upon the years of teaching experience interaction with type of preparation program (traditional and non-traditional). Years of teaching experience independent of the program type was also unrelated to the three teacher efficacy subscales, as well as program type without the interaction of years of teaching experience on the three subscales.

While there is not a statistically significant difference between respondent scores from the two programs, according to the TSES the means of both the non-traditional and traditional participant scores indicate fairly high levels of efficacy in classroom management with mean scores of 60.98 and 59.80 respectively out of a possible 72

points. Instructional strategies mean scores of 59.79 and 58.54 respectively also is considered as having high levels of efficacy. Both groups had slightly lower means for teacher efficacy in student engagement with mean scores of 54.26 from non-traditional respondents and 53.89 from the traditional scores, however these scores also fell within the "quite a bit" of efficacy range on the likert scale indicating high levels of efficacy in student engagement.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

This chapter restates the purpose and research questions of this study. A summary of the study and its major findings are presented. Conclusions drawn from data analyses, a discussion of the findings, and recommendations for future research regarding teacher efficacy will also be explored.

Purpose of the Study

The purpose of this causal-comparative study was to compare participants certified through two post-baccalaureate career and technical education (CTE) teacher preparation programs (traditional and non-traditional) in terms of the teacher self-efficacy dimensions of student engagement, instructional strategies, and classroom management. These three variables were assessed using the Teachers' Sense of Efficacy scale - long form (TSES; Tschannen-Moran & Woolfolk Hoy, 2001). The TSES is based on Bandura's (1977a, 1977b) theory of self-efficacy and cognitive social learning theory. The impact of years of teaching experience as an independent variable on teacher self-efficacy was examined. Results of this study may add to the existing body of research on self-efficacy, particularly with respect to the teacher efficacy of certified CTE teachers. It also will help to inform CTE teacher preparation practices.

The specific objectives to be addressed in this study were:

1. To describe teachers who have completed either the traditional or non-traditional post-baccalaureate CTE teacher preparation programs at UGA in terms of age, gender, ethnicity, certification field, and years of teaching experience.
2. To compare the levels of teacher's sense of efficacy subscale areas of student engagement, instructional strategies, and classroom management among teachers who have completed these post-baccalaureate teacher preparation programs (traditional and non-traditional).
3. To compare teachers completing these post-baccalaureate teacher preparation programs (traditional and non-traditional) by years of teaching experience on the teacher's sense of efficacy subscale areas of student engagement, instructional strategies, and classroom management.

Research Design

This study employed a causal-comparative design. Causal-comparative research designs are used when cause and effect relationships between a categorical independent variable and one or more dependent variables are examined (Fraenkel & Wallen, 2003). Causal-comparative designs attempt to determine reasons for pre-existing differences in groups or individuals on dependent variables (Schenker & Rumrill, 2004). These designs do not manipulate the independent variable, observing relationships "between naturally occurring variations in the presumed independent and dependent variables" (Gall et al., 2003, p. 296) and therefore can not "conclude with certainty what effect the independent variable had on the dependent variable" (Schenker & Rumrill, 2004, p. 118).

This research studied three quantitative dependent variables: (a) efficacy in student engagement; (b) efficacy in instructional strategies; and (c) efficacy in classroom management. In addition to type of teacher preparation program (traditional or non-traditional), years of teaching experience was included as a categorical independent variable. There were several delimitations to consider regarding this study. The participants themselves were from naturally occurring groups of teachers that differed in respect to the type of preparation program they completed for career and technical teacher certification. Studying these groups allowed the ability to determine if the participants have similar or differing levels of self-efficacy in student engagement, instructional strategies, and classroom management. Any differences found in these areas between the self-selected groups could possibly have been caused by some other non-identified reason. It is possible that participants chose the traditional or non-traditional certification preparation program based on undetermined factor(s) not included in this research. Participants have all completed career and technical teacher certification programs and held at minimum a bachelor's degree at the time of certification, therefore the results are not generalizable beyond these restrictions.

An ex-post facto, or after the fact, design is appropriate because the study was conducted after these teachers completed their respective programs and have taught in the classroom. Parker and Gallivan (2004) state it is more likely the researcher will obtain responses that represent of all sub-groups within the group being studied when conducting research if both groups are well represented. Inviting everyone during this time period to participate in the study allowed both traditional and non-traditional career and technical education certification program participants from different subject areas to

be accurately represented. Attempts were made to restrict possible underlying variables, however other factors not addressed in this research may impact the dependent variable, therefore conclusions made regarding causality of the independent variables to the dependent variable will be limited (Fraenkel & Wallen, 2001; Moran, 2005).

Population and Sample

This study examined efficacy of teachers trained through the traditional and non-traditional CTE teacher preparation programs at the University of Georgia. In an attempt to ensure quality of the programs was similar, those that were given the opportunity to participate were all program completers from 2005 through 2008, the years that both programs adopted the Georgia Framework for Teaching and modified their curriculum to align with this framework (personal communication, C. Smith & E. Adams, 2008). Courses were similar, as participants would have had the same admissions requirements, course requirements, and professors. All participants had previously earned a bachelor's degree.

This study measured the teacher efficacy for current CTE educators, therefore analysis of efficacy in student engagement, instructional strategies, and classroom management was preformed only on those currently teaching. While 99 of the 144 invitations to participate in the study responded to the study which would have resulted in a 69% response rate, the attrition rate of 16 CTE teachers and one undergraduate teacher excluded 17 of the responses resulting in a 56.9% response rate, lower than the 60% suggested response rate by Dillman (2007).

Sixteen respondents reported that they were not currently teaching grades K-12 and therefore only demographic information was obtained since they were not asked the

likert scale items. One respondent did not hold a bachelor's degree and was excluded from the study. Analysis of the three Teachers Sense of Efficacy subscales (TSES; Tschannen-Moran & Woolfolk Hoy, 2001) was conducted on the 82 respondents that fell within the parameters of the study

Instrument

The questionnaire for this study was the *Teachers' Sense of Efficacy Scale* (TSES) long form, a measure of self-efficacy developed by Tschannen-Moran and Woolfolk Hoy (2001) that is based on Bandura's (1977b) self-efficacy theory. The TSES long form consists of 24 items and was constructed using a 9-point Likert-type scale. The scale ranges from "Nothing" (1 point) to "Very Little" (3 points) to "Some Influence" (5 points) to "Quite a Bit" (7 points) and "A Great Deal" (9 points). Tschannen-Moran and Woolfolk Hoy found that the TSES loads consistently on three moderately correlated factors: Efficacy in Student Engagement, Efficacy in Instructional Strategies and Efficacy in Classroom Management. Each factor is evaluated by eight items on the 24-item scale.

Seven demographic questions were added. The demographic portion of the questionnaire asked the participants to report if they are currently teaching, their program type (traditional or non-traditional), certification field, gender, age, ethnicity, and number of years teaching experience. The TSES including the additional demographic questions were in the form of an online questionnaire. The TSES was selected as the instrument in this study because it "is superior to previous measures of teacher efficacy in that it has a unified and stable factor structure and assesses a broad range of capabilities that teachers consider important to good teaching, without being so specific as to render it useless for

comparisons of teachers across contexts, levels and subjects" (Tschannen-Moran & Woolfolk Hoy, 2001, p. 801).

Research Procedures

Permission was requested from the Institutional Review Board (IRB) at The University of Georgia. Once approval from IRB was granted, data collection began in September of 2008. Respondents were emailed an invitation to participate in the study with a hyperlink to the questionnaire. The first page of the questionnaire included the letter of consent, and to access the questionnaire the participant clicked the "begin questionnaire" to begin and at the end of the questionnaire the respondent clicked on the "submit" button to save and send their responses.

Each item on the questionnaire was optional. All participants were asked the demographic questions. Only those that were currently teaching in grades K-12 were asked the 24 TSES items. Participants had the option to save responses and return to the questionnaire, or discontinue participation in the study at any time.

Data Analysis

Data compilation, verification, and analyses were completed using Statistical Analysis Software (SAS) version 9.1. Both descriptive and inferential statistics were used to compare the independent variables with the dependent variables. Means and standard deviations were calculated to compare respondents' data with the teacher efficacy subscales of instructional strategies, student engagement, and classroom management. A one-way analysis of variance (ANOVA) was used to determine if there was a statistically significant difference between program type and the three teacher efficacy subscales. A two-way analysis of variance (ANOVA) was used to determine if there was

a statistically significant difference between the interaction of program type (traditional and non-traditional) and years of teaching experience (0-3 years and 4+ years).

Summary of Findings

The Teachers' Sense of Efficacy Scale (TSES, Tschannen-Moran & Woolfolk Hoy, 2001) assigns a 1-9 point likert scale scores to teacher efficacy. Efficacy in student engagement, instructional strategies, and classroom management are the three subscales of the TSES. Each subscale included 8 items with a possible 9 point rating, or a possible score of 72. According to the TSES likert scale, a score of 1 indicates no efficacy, a score of 3 indicates "very little" efficacy, a score of 5 indicates "some degree" of efficacy, a score of 7 indicates "quite a bit" of efficacy a score of 9 indicates "a great deal" of teacher efficacy in the given subscale. The subscale scores from the traditional and non-traditional teachers were analyzed as TSES subscale scores to report findings related CTE teacher efficacy.

The majority of the 82 currently teaching respondents from both programs were female; with 81% of the non-traditional respondents and 63% of the traditional respondents reporting they were female. Most were of Caucasian or African American ethnicity. Seventy-nine percent of the non-traditional program and 68% of the traditional program reported they were Caucasian, and 19% of the non-traditional and 26% of the traditional program responders reported they were African American. As for certification field, business education represented the largest percentage for both the non-traditional and traditional programs with percentages of 40% and 63% respectively. Family and Consumer Science and Technology Education were the next largest certification fields for both programs followed by smaller percentages in the fields of Health Occupations,

Marketing, and Trade and Industrial Education. Ages of the non-traditional participants ranged from 24 to 61 years with a median age of 36, while the traditional participants ages ranged from 26 to 53 years with a median age of 36. Regarding of years of teaching experience, the non-traditional participants ranged from one to 17 years with a median teaching experience of five years, and the teaching experience of the traditional participants ranged from one to 24 years with a median teaching experience of three years.

Years of teaching experience interaction with type of preparation program revealed no significant differences in the student engagement, instructional strategies, or classroom management teacher efficacy subscales. Results also revealed no significant differences in the student engagement, instructional strategies, or classroom management teacher efficacy subscales based upon type of preparation program alone (traditional and non-traditional) and no significant differences based on years of teaching experience (0-3 and 4+ years) on the three subscales alone were found.

Conclusions

Based upon findings of this research study, the following conclusions are drawn:

1. Demographic responses of both programs were similar in the areas of gender, ethnicity, certification field, age, and years of teaching experience. The literature would argue that non-traditional programs promote more males, minorities, and older applicants than the traditional programs, however in this study this is not the case. In fact, the traditional program had a slightly higher percentage of males and minorities. Respondents from the traditional program were of similar age to the non-traditional program.

2. There was not a statistically significant difference between the interaction of program type (traditional or non-traditional) and the years of teaching experience (0-3 or 4+) on the teacher efficacy subscales of student engagement, instructional strategies, or classroom management. Respondents from both programs, regardless of years of teaching experience, reported similar levels of teacher efficacy in student engagement, instructional strategies, and classroom management.
3. There was not a statistically significant difference between program type (traditional or non-traditional) and teacher efficacy in student engagement, instructional strategies, or classroom management. Based on this finding, respondents from both the traditional and non-traditional programs felt similar levels of efficacy in student engagement, instructional strategies, and classroom management.
4. There was not a statistically significant difference between years of teaching experience (0-3 or 4+) and teacher efficacy in student engagement, instructional strategies, or classroom management. Respondents with 0-3 and 4+ years of teaching experience reported similar levels of efficacy in student engagement, instructional strategies, and classroom management.
5. The ratings of both the non-traditional and traditional participant scores were fairly high in the three teacher efficacy subscales. Scores from both programs fell within the TSES (Tschannen-Moran & Woolfolk Hoy, 2001) likert scale headings of “quite a bit” to “a great deal” of efficacy in the areas of student engagement, instructional strategies, and classroom management.

Discussion

It is interesting to note that both the non-traditional and traditional programs in this study had a median age of 36. The non-traditional and traditional teachers were similar in age with mean ages of 38 and 37 respectively. The non-traditional program ages ranged from 24 to 61 while the traditional teachers ranged from 26-53 years of age. This is in contrast to Ruhland and Bremer (2004) and Feistritizer's (2005) studies that showed traditionally prepared educators are typically much younger than non-traditional route candidates. In regards to ethnicity and gender, the demographics of this study are in alignment with the Ruhland and Bremenr (2004) and Feistritizer (2005) studies that reported predominately Caucasian females in both programs. Unlike the Ruhland and Bremenr (2004) and Feistritizer (2005) studies however, results of this study do not reveal the non-traditional route to serve more diverse populations than the traditional certification programs. In fact, results of this study reveal the traditional program to be slightly more diverse regarding the enrollment of males and minorities.

Tschannen-Moran and Woolfolk Hoy (2007) found that beginning teachers had lower teaching efficacy scores than their veteran colleagues stating that "it is also possible that teachers who start their careers with low self-efficacy either tend to find better instructional strategies to improve their teaching performance over time, thus increasing their sense of efficacy and if they do not, they leave the profession" (p. 952). Self-efficacy theory suggests that years of teaching experience may possibly influence teacher efficacy. The experience of actually performing a task, such as teaching, does seem to fall within mastery experiences. Bandura (1997) stressed that mastery

performance accomplishments are the most influential source of self-efficacy determination.

This study however found no significant differences between the interaction of program type and years of teaching on any of the teacher efficacy subscales, or between program type or years of teaching alone on the three subscales. This is inconsistent with findings from Tschannen Moran and Woolfolk Hoy (2007) that found significant differences between beginning teachers and more experienced ones, but supports Soodak and Podell (2007) study that also found no significant difference in teacher efficacy between traditional and non-traditional trained secondary teachers.

Theory would suggest that program type may influence teacher efficacy. Performance accomplishments are the strongest of the sources of efficacy (Bandura, 1997) and the different mastery experiences from the two programs different field experiences (student teaching and year long internship) could shape teacher efficacy beliefs. Traditionally trained student teachers have more opportunities for direct modeling from their classroom mentors than the non-traditionally trained interns teaching in their own classrooms. On the other hand, the non-traditional interns have the mastery experiences of being instructor of record for a full year before certification completion. Self-efficacy theory also suggests that years of teaching experience would show significant difference as performance accomplishments are the strongest predictor of efficacy.

Low sample size could be a possible reason for the non-significant findings in this study. While 99 of the 144 invitations to participate in the study responded, which would have resulted in a 69% response rate, the attrition rate of 16 CTE teachers and one

undergraduate teacher excluded 17 of the responses resulting in a 56.9% response rate. This is lower than the 60% suggested response rate by Dillman (2007). Possibly the exploration of different independent variables not identified in this study may have found significant differences. The experiences of the program participants may have been more alike and persons going through the programs were simply not different enough to separate the programs as different independent variables. The majority of both certification program (non-traditional and traditional) participants were females certified in business education with similar mean ages of 38 and 37 respectively and similar mean years of teaching experience of 4.66 and 4.09 respectively. The bias of this study's non-experimental design also could have been a reason none of the findings were found to be significant.

Recommendations for Further Research

Based upon the findings and conclusions, the following recommendations for additional study are presented:

1. A study should be conducted that compares and contrasts the findings of this study with pre-service teachers about to begin their field experiences, after their field experiences, and after 5 years of teaching to see if their teacher efficacy is affected by these experiences.
2. A study should be conducted that compares and contrasts the findings of this study with a larger more gender and ethnically balanced sample to determine if gender or ethnicity holds significant differences in teacher efficacy.
3. Conduct a qualitative analysis study to determine teacher efficacy areas that need more emphasis separated by certification field (business, family and consumer

sciences, marketing, health occupations, technology, and trade and industry education).

4. A study should be conducted that compares teacher efficacy and actual ability of teachers from the traditional and non-traditional programs to determine if teachers have heightened efficacy but inflated teaching ability.

Significance of Study

In order to better prepare career and technical education teachers, this study sought to determine to what extent there is a difference in perceived teachers' sense of efficacy along the dimensions of efficacy in student engagement, efficacy in instructional strategies, and efficacy in classroom management between traditional and non-traditional trained CTE teachers.

The theoretical significance of this study is to add to the body of literature research on the examination of teachers' sense of efficacy of teachers that were trained through two different University CTE preparation programs: traditional and non-traditional. This study is of practical significance to (a) post-secondary programs seeking to certify CTE teachers, (b) those interested in pursuing CTE certification, and (c) researchers that seek to further ways to produce more efficacious CTE teachers that are committed to teacher quality.

This research could help career and technical education preparation programs gain insight into the relationship between teachers' sense of efficacy and certification preparation strategies. These insights could provide information for these programs as they seek strategies to better prepare future career and technical educators who are not

only prepared to teach through the completion of an approved certification program, but with strengthened teacher efficacy, also perceive themselves as able to teach.

There is an immediate need for qualified CTE teachers (Brand, 2008). One way CTE teacher preparation programs can improve teacher quality is to identify variables that influence teacher efficacy in relation to issues specific to career and technical education. This study compared CTE teaching efficacy scores from traditional and non-traditional preparation programs at the University of Georgia. Bandura (1991) stresses that programs should not consider ability and capability as synonymous terms and that it is important to discern that ability is what a teacher can do at the present time, but capability is what a teacher could possibly do in the future. Programs need to not only build ability but increase teacher efficacy so that teachers can be confidant in their capability to tackle new educational issues and tasks that may come their way in the future. Tschannen-Moran et al. (1998) claim that "once efficacy beliefs are established, they appear to be somewhat resistant to change" (p. 235). Therefore, the time to most impact a prospective teacher's sense of efficacy is during their certification process and first three years of teaching, before they become a veteran teacher and establish judgment in their ability to reach and teach all students (1998).

REFERENCES

Adams, E. (1999). Vocational teacher stress and internal characteristics. *Journal of Vocational and Technical Education, 16*(1), 7-22.

Anderson, R. N., Greene, M. L., & Loewen, P. S. (1988). Relationships among teachers' and students' thinking skills, sense of efficacy, and student achievement. *The Alberta Journal of Educational Research, 34,* 148-165.

Armor, D., Conroy-Osefuera, P., Cox, M., King, N., McDonnell, L., Pascal, A. (1976). *Analysis of the school preferred reading programs in selected Los Angeles minority schools* (Report No. R-2007-LAUSD). Santa Monica, CA: RAND. (ERIC Document Reproduction Service No: ED130243)

Ashton, P. T., Buhr, D., & Crocker, L. (1984). Teachers' sense of efficacy: A self or norm-referenced construct? *Florida Journal of Educational Research, 26*(1), 29-41.

Ashton, P. T., Olejnik, S., Crocker, L., & McAuliffe, M. (1982). *Measurement problems in the study of teachers' sense of efficacy*. Paper presented at the annual meeting of the American Educational Research Association, NY.

Ashton, P. T., & Webb, R. B. (1986). *Making a difference: Teachers' sense of efficacy and student achievement*. New York: Longman.

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

Bandura, A. (1977b). *Social learning theory*. Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. (1978). Reflections on self-efficacy. *Advances in Behavioral Research and Therapy, 1,* 237-269.

Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist, 37*, 122-147.

Bandura, A. (1988). Self-efficacy conception of anxiety. *Anxiety Research, 1*, 77-98.

Bandura, A. (1995). *Self-efficacy in changing societies*. New York: Cambridge University Press.

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

Bandura, A. (2006a). Adolescent development from an agentic perspective. In F. Pajares, & T. Urdan (Eds.), *Self-efficacy beliefs of adolescents*, (pp. 1-43). Greenwich, CT: Information Age Publishing.

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

Bandura, A., & Cervone, D. (1986). Differential engagement of self-reactive influences in cognitive motivation. *Organizational Behavior & Human Decision Processes, 38*, 92.

Bandura, A., & Schunk, D. H. (1981). Cultivating competence, self-efficacy and intrinsic interest through proximal self-motivation. *Journal of Personality and Social Psychology, 41*, 586-598.

Berman, P., McLaughlin, M., Bass, G., Pauly, E., & Zellman, G. (1977). *Federal programs supporting educational change: Vol. VII. Factors affecting implementation and continuation* (Report No. R-1589/7-HEW). Santa Monica, CA: RAND. (ERIC Document Reproduction Service No. 140432)

Betz, N., & Hackett, G. (1981). The relationship of career-related self-efficacy expectations to perceived career options in college men and women. *Journal of Counseling Psychology, 28*, 399-410.

Blair, J. (2003). *If I can't learn anything from you: Ensuring a highly qualified teacher for every classroom* (pp. 54-65). Bethesda, MD: Editorial Projects in Education. (ERIC Document Reproduction Service No. ED 475003)

Bomia, L., Beluzo, L., Demeester, D., Elander, K., Johnson, M., & Sheldon, B. (1997). *The impact of teaching strategies on intrinsic motivation*. Champaign, IL: ERIC Clearinghouse on Elementary and Early Childhood Education. p. 294.

Bradshaw, L. (1998). *Policy, Politics, and Contradictions of Alternative Teacher Certification*. Paper presented at the Annual Meeting of the American Educational Research Association, San Diego.

Branch, L. E., & Lichtenberg, J. W. (1987). *Self-efficacy and career choice*. Paper presented at the annual meeting of the American Psychological Association, New York.

Brand, B. (2008). *Supporting High Quality Career and Technical Education through Federal and State Policy*. Paper presented at the annual meeting of the American Youth Policy Forum. Retrieved September 4, 2008 from http://www.aypf.org/documents/CTEMeetingPaper.pdf.

Bruening, T., Scanlon, D., Hodes, C., Dhital, P., Shao, X., & Liu, S. (2001). *The status of career and technical education teacher preparation*. Columbus, OH: National Dissemination Center for Career and Technical Education.

Burley, W., Hall, B. W., Villeme, M. G., & Brockmeier, L. L. (1991, April). *A path analysis of the mediating role of efficacy in first-year teachers' experiences, reactions, and plans*. Paper presented at the annual meeting of the Educational Research Association, Chicago.

Carbonaro, M., & Bainbridge, J. (2000, March). *Design and development of a process for web-based survey research*. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.

Chester, M., & Beaudin, B. (1996). Efficacy beliefs of newly hired teachers in urban schools. *American Education Research Journal, 2*, 233-257.

Chou, H. (2007). Multicultural teacher education: Toward a culturally responsible pedagogy. *Essays in Education*, *21*. Retrieved October 13, 2007, from http://www.usca.edu/essays/vol212007/chourevised.pdf

Coladarci, T. (1992). Teachers' sense of efficacy and commitment to teaching. *Journal of Experimental Education, 60*, 323-337.

Couper, M. P. (2000). Web surveys: a review of issues and approaches. *Public Opinion Quarterly, 64*(4), 464-494.

Cousins, J.B., & Walker, C.A. (2000). Predictors of educators' valuing of systematic inquiry in schools. *Canadian Journal of Program Evaluation, Special Issue titled Educational Evaluation at the Turn of the Millennium*, p. 25-53.

Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches* (2nd ed.). Thousand Oaks, CA: Sage.

Crowl, T. (1996). *Fundamentals of educational research* (2nd ed.). Madison, WI.

Daniel, L. G., & Witta, E. L. (1997, March). *Implications for teaching graduate students correct terminology for discussing validity and reliability on a content analysis of three social science measurement journals.* Paper presented at the annual meeting of the American Education Research Association, Chicago, IL.

Darling-Hammond, L. (2000). *Solving the dilemmas of teacher supply, demand, and standards: How we can ensure a competent, caring, and qualified teacher for every child*. New York: National Commission on Teaching & America's Future.

Darling-Hammond, L., & Youngs, P. (2002). Defining 'highly qualified teachers': What does 'scientifically-based research' actually tell us? *Educational Researcher, 31*(9), 13–25.

Dill, V. (1996). Alternative teacher certification. In J. Sikula, T. Buttery, & E. Guyton (Eds.), *Handbook of research on teacher education* (2nd ed., pp. 932-960). New York: Simon & Schuster.

Dillman, D.A. (1978). *Mail and telephone surveys : The total design method*. New York: John Wiley & Sons, Inc.

Dillman, D.A. (2000). *Mail and internet surveys*. (2nd ed.) New York: John Wiley & Sons, Inc.

Dillman, D.A. (2007). *Mail and internet surveys: The tailored design method*. (2nd edition). Hoboken, N.J.: John Wiley & Sons, Inc.

Dillman, D. A., & Bowker, D. K. (2001). *The Web questionnaire challenge to survey methodologists*. In U. D. Reips, & M. Bosnjak (Eds.), Dimensions of Internet science (pp. 159-178). Lengerich: Pabst Science Publishers.

Feather, N. T. (1969). Attribution of responsibility and valence of success in relationship to initial confidence and task performance. *Journal of Personality and Social Psychology, 13*(2), 129-144.

Feistritzer, C. E. (2005a). *Alternative routes to teacher certification*. Washington, DC: National Center for Education Information. Retrieved March 19, 2007, from http://www.ncei.com/Alt-Teacher-Cert.htm

Feistritzer, C. E. (2005b). *Profile of teachers in the U.S. 2005*. Washington, DC: National Center for Education Information.

Feistritzer, C. E. (2005c). *Profile of alternative route teachers.* Washington, DC: National Center for Education Information. Retrieved March 19, 2007, from http://www.ncei.com/PART.pdf

Feistritzer, C. E. (2006). *Alternative certification: A state-by-state analysis*. Washington, DC: National Center for Education Information.

Feistritzer, C. E. (2007a). *Alternative certification: Introduction*. Washington, DC: National Center for Education Information. Retrieved March 19, 2007, from http://www.teach-now.org/intro.cfm

Feistritzer, C. E. (2007b). *Alternate routes are attracting talented individuals from other careers who otherwise would not become a teacher*. Washington, DC: National Center for Education Information. Retrieved March 19, 2007, from http://www.ncei.com/part.html

Feistritzer, C. E. (2007c). Classification of state alternative routes. Washington, DC: National Center for Education Information. Retrieved March 19, 2007, from http://www.teach-now.org/classification.cfm

Feistritzer, C. E., & Chester, D. (1991). *Alternative teacher certification: A state by state analysis 1991*. Washington, DC: National Center for Education Information.

Feistritzer, C. E., & Chester, D. (2002). *Alternative teacher certification: A state by state analysis 2002*. Washington, DC: National Center for Education Information.

Fraenkel, J.R., & Wallen, N.E. (2003). *How to design and evaluate research in education*. (5th ed.) Boston: McGraw Hill.

Frey, A. (2002). Predictors of placement recommendations for children with behavioral or emotional disorders. *Behavioral Disorders, 27*, 126–136.

Gall, M., Gall, J., & Borg,W. (2003). *Educational research: An introduction.* (7th ed.). Boston: Allyn & Bacon.

Garrett, G. (1977). The effect of sex as a variable in teacher preparation. *Research & Technical Reports, 143*.

Georgia Professional Standards Commission. (n. d.). *Criteria for "highly qualified" teachers*. Retrieved March 19, 2007, from http://www.gapsc.com/ nclb/admin/files/ImpPolicy.pdf

Georgia Professional Standards Commission. (n. d.). *Routes to certification*. Retrieved March 19, 2007, from: http://www.gapsc.com/TeacherCertification/ Documents/routes.asp

Georgia Professional Standards Commission. (n. d.). *Educator testing*. Retrieved March 19, 2007, from http://www.gapsc.com/TeacherTesting.asp

Georgia Teacher Alternative Preparation Program. (2007). *Program framework and requirements*. Retrieved March 19, 2007, from http://www.gapsc.com/GATAPP/description/description_home.asp

Georgia Teacher Recruitment and Retention Subcommittee. (2006). *Discussion and benchmarking.* Retrieved March 19, 2007, from http://72.14.209.104/search?q=cache:S52eiPBLTcAJ:www.metroatlantachamber.com/images/regionaledvisionstatementteacherrecruitment.pdf+Georgia+Teacher+Recruitment+and+Retention+Subcommittee+(2006)&hl=en&ct=clnk&cd=1&gl=us

Gisbon, S., & Dembo, M. H. (1984). Teacher efficacy: A construct validation. *Journal of Educational Psychology, 76*(4), 569-582.

Gist, M. E., & Mitchell, T. R. (1992). Self-efficacy: A theoretical analysis of its determinants and malleability. *Academy of Management Review, 17*(2), 183-211.

Gloeckner, G. W., Gliner, J. A., Tochterman, S. M., and Morgan, G. A. (2001) Assessing validity and reliability for data collection instruments. In Edgar L. Farmer & Jay W. Rojewski (Eds.), *Research Pathways: Writing professional papers, theses, and dissertations in workforce education.* (pp. 223-245). Lanham, Maryland: University Press of America, Inc.

Greenwood, G. E., Olejnik, S. F., & Parkay, F. W. (1990). Relationships between four teacher efficacy belief patterns and selected teacher characteristics. *Journal of Research & Development in Education, 23*, 102-106.

Guskey, T. R. (1981). Measurement of responsibility teachers assume for academic successes and failures in the classroom. *Journal of Teacher Education, 32*, 44-51.

Guskey, T. R. (1987). Context variables that affect measures of teacher efficacy. *Journal of Educational Research, 81,* 41-47.

Guskey, T. R. (1988). Teacher efficacy, self-concept, and attitudes toward the implementation of instructional innovation. *Teaching & Teacher Education, 4*, 63-69.

Guyton, E., Fox, M., & Sisk, K. (1991). Comparison of teaching attitudes, teacher efficacy, and teacher performance of first year teachers prepared by alternative and traditional teacher education programs. *Action in Teacher Education, 13*(2), 1-9.

Haberman, M. (1994). Preparing teachers for the real world of urban schools. *The Education Forum, 58*(2), 162-168.

Hackett, G., & Betz, N. (1981). The relationship of career-related self-efficacy expectations to perceived career options in college men and women. *Journal of Counseling Psychology, 28*, 99-410.

Hall, B. W., Burley, W., Villeme, M. G., & Brockmeier, L. (1992, April). An attempt to explicate teacher efficacy beliefs among first year teachers. Paper presented at the Annual Meeting of the Educational Research Association, San Francisco.

Harms, B., & Knobloch, N. (2005). Preservice teachers' motivation and leadership behaviors related to career choice. *Career and Technical Education Research, 30*(2), 101-124.

Hawk, P., & Schmidt, M. (1989). Teacher preparation: A comparison of traditional and alternative programs. *Journal of Teacher Education, 40*(5), 53-58.

Hess, Frederick M. (2001). *Tear down this wall: The case for a radical overhaul of teacher certification.* Washington, D.C.: Progressive Policy Institute, 21st Century Schools Project, November, 2001.

Hill, R. B. (2001). Survey research. In Edgar L. Farmer & Jay W. Rojewski (Eds.), *Research Pathways: Writing professional papers, theses, and dissertations in workforce education.* (pp. 202-222). Lanham, Maryland: University Press of America, Inc.

Hines, W., & Montgomery, D. C. (1990). *Probability and statistics in engineering and management science.* (3rd ed.). USA, John Wiley & Sons, Inc.

Hirsch, E. (2001). *Teacher recruitment: Staffing classrooms with quality teachers*. Denver, CO: State Higher Education Executive Officers. (ERIC Document Reproduction Service No. ED 453199)

Houston, W., Marshall, F., & McDavid, T. (1993). Problems of traditionally prepared and alternatively certified first-year teachers. *Education and Urban Society, 26*(1), 78–89.

Hoy, W. K., & Woolfolk, A. E. (1993). Teachers' sense of efficacy and the organizational health of schools. *Elementary School Journal, 93*(4), 355.

Huck, S. W., & Cormier, W. H. (1996). *Reading statistics and research*. New York: Harper Collins.

Ingersoll, R., & Smith, T. (2003). The wrong solution to the teacher shortage. *Educational Leadership, 60*(8), 30-33.

Keppel G. (1991). *Design and analysis: A researcher's handbook*. 3rd ed. Englewood Cliffs: Prentice Hall.

Labone, E. (2004). Teacher efficacy: Maturing the construct through research in alternative paradigms. *Teaching and Teacher Education, 20*, 341–359.

Lilly, M. (1992). Research on teacher licensure and state approval of teacher education programs, *Teacher Education and Special Education*, *15*, 148–160.

Liu, X. S., & Meyer, J. P. (2005). Teachers' perceptions of their jobs: A multilevel analysis of the teacher follow-up survey for 1994-95. *Teachers College Record, 107*, 985-1003.

Lynch, R. (1996). The past, present and future of vocational and technical education. In N. K. Hartley & T. L. Wentling (Eds.), *Beyond tradition: Preparing the teachers of tomorrow's workforce* (pp. 1-22). Columbia: University of Missouri, University Council for Vocational Education. (ERIC Document Reproduction Service No. ED 440443)

Matz, C.M. (1999). *Administration of Web versus Paper Surveys: Mode effects and response rates.* Masters research paper, University of North Carolina, Chapel Hill.

McLaughlin, M.W., & Marsh, D. D. (1978). Staff development and school change. *Teachers College Record, 80*, 70-94.

Meijer, D., & Foster, S. (1988). The effect of teacher self-efficacy on referral chance. *Journal of Special Education, 22*, 378-385.

Midgley, C., Feldlaufer, H., & Eccles, J. S. (1989). Change in teacher efficacy and student self-efficacy and task-related beliefs in mathematics during the transition to junior high school. *Journal of Educational Psychology, 81*(2), 247-258.

Moore, W., & Esselman, M. (1992). *Teacher efficacy, power, school climate and achievement: A desegregating district's experience*. Paper presented at the annual meeting of the American Educational Research Association, San Francisco.

Moran, G. (2005). *Job satisfaction, commitment, and teaching status among alternatively certified career and technical education teachers*. Unpublished doctoral dissertation. University of Georgia, Athens.

Murshidi, R., Konting, M. M., Elias, H., & Fooi, F. S. (2006). Sense of efficacy among beginning teachers in Sarawak. *Teaching Education*, *17*(3), 265-275.

National Board for Professional Teaching Standards. (2007). *2007 Guide to national board certification.* Retrieved March 19, 2007, from http://www.nbpts.org/ UserFiles/File/Guide_2007_unlweb.pdf

National Commission on Excellence in Education. (1983). *A nation at risk: The imperative for educational reform*. Washington, D.C.

National Education Goals Panel. (1991). *The National Education Goals report, 1991: Building a nation of learners*. Washington, DC: U.S. Government Printing Office.

No Child Left Behind Act of 2001. Pub. L. No. 107-110, 115 Stat 1425 (2002).

Official Code of Georgia Annotated. (2006). *Title 20, education*. Retrieved March 19. 2007. from http://w3.lexis-nexis.com/hottopics/gacode/Default.asp

Okun, B. (1984). Working with adults: Individual, family, and career development. Belmont, CA: Brooks/Cole.

Pajares, F., & Schunk, D. (2001). Self-beliefs and school success: self efficacy, self concept, and school achievement. In R. Riding & S. Rayner (Eds.), *Perception* (pp. 239-266). London: Ablex Publishing.

Pajares, F., & Urdan, T. (Eds.). (2006). *Self-efficacy beliefs of adolescents*. USA: Information Age Publishing, Inc.

Parker, S., & Gallivan, C. (2004). *Sampling versus census: A comparative analysis*. Foresight Survey Support International, Inc.

Podell, D., & Soodak, L. (1993). Teacher efficacy and bias in special education referrals. *Journal of Educational Research, 86*, 247-253.

Roach, V., & Cohen, B. (2002). *Moving past the politics: How alternative certification can promote comprehensive teacher reforms*. National Association of State Boards of Education. Alexandria, VA.

Rojewski, J. W. (2001). Considerations for statistical significance testing. In Edgar L. Farmer & Jay W. Rojewski (Eds.), *Research Pathways: Writing professional papers, theses, and dissertations in workforce education.* (pp. 349-366). Lanham, Maryland: University Press of America, Inc.

Rose, J. S., & Medway, F. J. (1981). Measurement of teachers' beliefs in their control over student outcome. *Journal of Educational Research, 74*, 185-190.

Rose, M. (2007). *A Reflection on Career and Technical Education, Multiple Pathways, and the Academic-Vocational Divide.* UCLA's Institute for Democracy, Education, & Access. Multiple Perspectives on Multiple Pathways Series. Paper mp-rr012-0207.

Ross, J. A. (1992). Teacher efficacy and the effects of coaching on student achievement. *Canadian Journal of Education, 17*, 51-65.

Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs, 80*, 1-28.

Ruhland, S., & Bremer, C. (2002). *Alternative teacher certification procedures and professional development opportunities for career and technical education teachers*. Columbus, OH: National Dissemination Center for Career and Technical Education. (ERIC Document Reproduction Service No. ED472438)

Ruhland, S., & Bremer, C. (2004). Perceptions of traditionally and alternatively certified career and technical education teachers. *Journal of Vocational Education Research, 28*(3), 285-302.

Saks, A. M. (1995). Longitudinal field investigation of the moderating and mediating effects of self-efficacy on the relationship between training and newcomer adjustment. *Journal of Applied Psychology, 80*, 211-225.

Schenker, J. D., & Rumrill, P. D. (2004). Causal-comparative research designs. *Journal of Vocational Rehabilitation, 21*(3), 117-121.

Schillewaert, N., Langerak, F., & Duhamel, T. (1998). Non probability sampling for WWW surveys: A comparison of methods. Journal of the Market Research Society, 4, (40), pp. 307-313.

Schlecty, P. (1984). Increasing Student Engagement. Missouri Leadership Academy. p. 5.

Schlecty, P., & Vance, V. (1983). Recruitment, selection, and retention: The shape of the teaching force. *The Elementary School Journal, 83*(4), 469-487.

Silver, W. S., Mitchell, T. R., & Gist, M. E. (1995). Responses to successful and unsuccessful performance: The moderating effect of self-efficacy on the relationship between performance and attributions. *Organizational Behavior & Human Decision Processes, 62*, 286-299.

Silverberg, M., Warner, E., Fong, M., & Goodwin, D. (2004). National assessment of vocational education: Final report to congress. [Executive Summary]. *U.S. Department of Education, Office of the Under Secretary, Policy and Program Service, National Assessment of Vocational Education.* Retrieved December 10, 2007 from http://www.ed.gov/rschstat/eval/sectech/nave/reports.html.

Soodak, L., & Podell, D. (1993). Teacher efficacy and student problems as factors in special education referral. *Journal of Special Education, 12,* 66-81.

Spouses to Teachers. (2007). Spouses to Teachers website. Retrieved March 19, 2007, from http://www.spousestoteachers.com/

Stein, M. K., & Wang, M. C. (1988). Teacher development and school improvement: The process of teacher change. *Teaching & Teacher Education, 4*, 171-187.

Stickel, S., & Bonnett, R. (1991). Gender differences in career self-efficacy: Combining a career with home and family. *Journal of College Student Development*, *32*(4), 297-301.

Stoodak, L., & Podell, D. (1997). Efficacy and experience : Perceptions of efficacy among preservice and practicing teachers . *Journal of research and development in education 30(*4), pp. 214-221.

Stoddart, T., & Floden, R. (1995). *Traditional and alternate routes to teacher certification: Issues, assumptions, and misconceptions*. East Lansing, MI: National Center for Research on Teacher Learning.

Strunk, K., & Robinson, J. (2006). Oh, Won't You Stay: A Multilevel Analysis of the Difficulties in Retaining Qualified Teachers. *Peabody Journal of Education, 81*(4), 65 94.

Teach for America. (2007). Teach for America website. Retrieved March 19, 2007, from http://www.teachforamerica.org/

Thomas, S. (2004*). Using web and paper questionnaires for data-based decision making : from design to interpretation of the results*. Thousand Oaks, California, Corwin Press.

Troops to Teachers. (2007). Troops to Teachers website. Retrieved March 19, 2007, from http://www.proudtoserveagain.com/

Tschannen-Moran, M., & Woolfolk-Hoy, A. (2007). The differential antecedents of self-efficacy beliefs of novice and experienced teachers. *Teaching and Teacher Education, 23*, 944-956.

Tschannen-Moran, M., & Woolfolk-Hoy, A. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education, 17*, 783-805.

Tschannen-Moran, M., Woolfolk-Hoy, A., & Hoy, W. K. (1998). Teacher efficacy: Its meaning and measure. *Review of Educational Research, 68*(2), 202-248.

Tucker, C. M., Porter, T., Reinke, W. M., Herman, K. C., Ivery, P. D., Mack, C. E., & Jackson, Erin S. (2005). Promoting teacher efficacy for working with culturally diverse students. *Preventing School Failure, 50*(1), 29.

University of Georgia. (n. d.). Preparation Academy for Career and Technical Educators (PACTE) website. Retrieved January 3, 2008 from http://www.coe.uga.edu/welsf/occstudies/initiatives/pacte.html

Young, S., & Ross, C. (2000). Web questionnaires: A glimpse of survey research in the future. *Parks and Recreation*, June, 30-42.

Walsh, K. (2001). *Teacher certification reconsidered: Stumbling for quality*. Baltimore, MD: Abell Foundation.

Walter, R., & Gray, C. (2002). Teacher preparation and licensure in career and technical education: A public policy analysis. *Journal of Vocational Education Research, 27*(1), 127-149.

Weber, K., & Custer, R. (2005). Gender-based preferences toward technology education content, activities, and instructional methods. *Journal of Technology Education, 16*(2), 55-71.

Weinberg, R. S., Gould, D., & Jackson, A. (1979). Expectations and performance: An empirical test of Bandura's self-efficacy theory. *Journal of Sport Psychology, 1*, 320-331.

Werhan, C. (2002). Family and consumer sciences teacher education: Not for women only. *Workforce Education Forum, 29*(2), 50-57.

Witte, J. C., Amoroso, L. M., & Howard, P. E. N. (2000). Research Methodology: Method and Representation in Internet-Based Survey Tools-Mobility, Community, and Cultural Identity in Survey2000. *Social Science Computer Review, 18*(2), 179 - 195.

Wonacott, M. (2002). *Teacher induction programs for beginning CTE teachers. In brief: Fast facts for policy and practice No. 19*. (Report No. NDCCTE-19). National Dissemination Center for Career and Technical Education, Columbus, OH. (ERIC Document Reproduction Service No: ED462623)

Wong, H., & Rosemary T. (1998). The First Days of School: How to Be an Effective Teacher. Wong Publishing.

Wood, R., & Bandura, A. (1989). Social cognitive theory of organizational management. *Academy of Management Review, 14*, 361.

Woolfolk, A., & Hoy, W. K. (1990). Prospective teachers' sense of efficacy and beliefs about control. *Journal of Educational Psychology, 82*, 81-91.

Woolfolk, A., Rosoff, B., & Hoy, W. K. (1990). Teachers' sense of efficacy and their beliefs about managing students. *Teaching & Teacher Education, 6*, 137-148.

Woolfolk-Hoy, A., & Davis, H. (2006). Teacher self-efficacy and its influence on the achievement of adolescents. In F. Pajares, & T. Urdan (Eds.), *Self-efficacy beliefs of adolescents*, (pp. 117-137). Greenwich, CT: Information Age Publishing.

APPENDIX A

THE GEORGIA FRAMEWORK FOR TEACHING

Georgia Framework For Teaching					
CONTENT AND CURRICULUM	**KNOWLEDGE OF STUDENTS**	**LEARNING ENVIRONMENTS**	**ASSESSMENT**	**PLANNING AND INSTRUCTION**	**PROFESSIONALISM**
1.1 demonstrate knowledge of content, major concepts, assumptions, debates, processes of inquiry, and ways of knowing central to subject(s) they teach.	2.1 believe that all children can learn at high levels and hold high expectations for all.	3.1 create a learning community in which students assume responsibility, participate in decision-making, and work both collaboratively and independently.	4.1 understand measurement theory and the characteristics, uses, and issues of different types of assessment.	5.1 articulate clear and defensible rationales for their choices of curriculum materials and instructional strategies.	6.1 continually examine and extend their knowledge of the history, ethics, politics, organization, and practices of education.
1.2 understand and use subject-specific content & pedagogical content knowledge (how to teach their subjects) that is appropriate for diverse learners they teach.	2.2 understand how learning occurs in general and in the content areas (e.g., how diverse learners construct knowledge, acquire skills, and develop habits of mind).	3.2 organize, allocate, and manage time, space, activities, technology and other resources to provide active and equitable engagement of diverse students in productive tasks.	4.2 use preassessment data to select or design clear, significant, varied andappropriate student learning goals.	5.2 plan and carry out instructionbased upon knowledge of content standards, curriculum, students,learning environments, and assessment.	6.2 understand and implement laws related to rights and responsibilities of students, educators, and families.
1.3 stay current in their subject areas as engaged learners and/or performers in their fields.	2.3 are sensitive, alert, and responsive to all aspects of a child's well being.	3.3 understand and implement effective classroom management.	4.3 choose, develop, and use classroom-based assessment methods appropriate for instructional decisions	5.3 understand and use a variety of instructional strategies appropriately to maintain student engagement and support the learning of all students.	6.3 follow established codes of professional conduct, including school and district policies.
1.4 relate content area(s) to other subject areas and see connections to everyday life.	2.4 understand how factors in environments inside and outside of school may influence students' lives and learning.	3.4 recognize the value of and use knowledge about human motivation and behavior to develop strategies for organizing and supporting student learning.	4.4 involve learners in selfassessment, helping them become aware of their strengths /needs and encouraging them to setpersonal goals for learning	5.4 monitor and adjust strategies in response to learner feedback.	6.4 systematically reflect on teaching and learning to improve their own practice.
1.5 carefully select and use a wide variety of resources, including available technology, to deepen their own knowledge in the content area(s).	2.5 are informed about and adapt their work based on students' stages of development, multiple intelligences, learning styles, areas of exceptionality	3.5 are sensitive to and use knowledge of students' unique cultures, experiences, and communities to sustain a culturally responsive classroom.	4.5 develop and use valid, equitable grading procedures based on student learning	5.5 vary their roles in the instructional process (e.g. instructor, facilitator, coach, audience) in relation to the content and purposes of instruction and the needs of students.	6.5 seek opportunities to learn based upon reflection, input from others, and career goals.
1.6 interpret and construct school curriculum that reflects state and national content area standards.	2.6 establish respectful /productive relationships with families and seek to develop cooperative partnerships in support of student learning and wellbeing.	3.6 access school, district, and community resources in order to foster students' learning and well-being.	4.6 use assessment data to communicate student progress knowledgeably and responsibly to students,parents, and other school personnel.	5.6 use appropriate resources, materials, and technology to enhance instruction for diverse learners.	6.6 advocate for curriculum, instruction, learning environments, and opportunities that support the diverse needs of and high expectations for all students.
		3.7 use effective verbal, nonverbal, and media communication techniques to foster active inquiry, collaboration, and supportive interaction in the classroom.	4.7 use resources, including available technology, to keep accurate and up-to-date records of student work, behavior, and accomplishments.	5.7 value and engage in planning as a collegial activity.	6.7 assume leadership and support roles as part of a school team.
			4.8 are committed to using assessment to identify student strengths		

APPENDIX B

FIRST EMAIL INVATATION TO PARTICIPATE IN THE STUDY

Dear [NAME]:

You are being asked to participate in a research study on teacher beliefs conducted by Renee Smith (rjsmith@uga.edu) from the Department of Workforce Education, Leadership and Social Foundations at the University of Georgia. This study is being conducted under the supervision of Dr. Clifton Smith, 205 River's Crossing, Athens, Georgia (706-542-4208).

Your participation in this study will contribute to the completion of my doctoral dissertation. The study consists of an online questionnaire that will be administered to individual participants through Hosted Survey, a third party vendor. You will be asked to provide answers to 24 questions related to teacher beliefs and 8 additional demographic questions. The online questionnaire will take approximately 10 minutes to complete. Your responses will be confidential, however, there is a limit to the confidentiality that can be guaranteed due to the technology itself. Your participation is entirely voluntary. The completion and submission of the questionnaire will indicate your willingness to participate in this research.

Participation in this research study will not benefit you directly, however, it may lead to information that could help inform the researcher of any suggestions for Career and Technical Education teacher preparation courses; therefore possibly impacting future CTE teacher preparation.

You are one of a very small number of teachers being asked to participate in this study. In order for the study to truly represent the beliefs of career and technical educators, it is very important that you take a moment to complete the questionnaire. If you would prefer a hard copy of the questionnaire please email or call me and I will mail it to you. You may request a copy of the final report of the study's findings. If you have any questions do not hesitate to contact me by email at rjsmith@uga.edu or call 770-554-6151.

To participate in the study, please click the following hyperlink, answer the 32 questions on the questionnaire, and click submit. Thank you for taking the time to help me complete my dissertation. I truly appreciate your time and willingness to participate in this research study.

[hyperlink to the questionnaire here]

Sincerely,

Renee Smith
Business Education Teacher
Grayson High School

Additional questions or problems regarding your rights as a research participant should be addressed to The Chairperson, Institutional Review Board, University of Georgia, 612 Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411; Telephone (706) 542-3199; E-Mail Address IRB@uga.edu

APPENDIX C

SECOND EMAIL INVATATION TO PARTICIPATE IN THE STUDY

Dear [Name]:

Last week a questionnaire asking about your experiences as a Career and Technical Education teacher was e-mailed to you. You are one of a very small number of recently certified Career and Technical Education teachers being asked to participate in this census study.

Please take the time to fill out the short online questionnaire and submit it today.
In order for the study to truly represent the experience of Career and Technical Education teachers, it is very important that each questionnaire be completed and submitted. If you are having trouble accessing or submitting the questionnaire, please call me now at 770-554-6151 or send an e-mail to rjsmith@uga.edu, and I will send you a hard copy of the questionnaire. Thank you for your time and participation in this research study.

Click the following link to participate in the questionnaire:
[link]

Sincerely,

Renee Smith, Ph.D. Candidate
Grayson High School
Work-Based Learning Coordinator
FBLA Adviser

APPENDIX D

COVER PAGE WITH ITEMS OF CONSENT

Teacher Beliefs Questionnaire

You are being asked to participate in a research study on CTE teacher beliefs about student engagement, instructional strategies, and classroom management conducted by Renee Smith (rjsmith@uga.edu) from the Department of Workforce Education, Leadership and Social Foundations at the University of Georgia. This study is being conducted under the supervision of Dr. Clifton Smith, 205 River's Crossing, Athens, Georgia (706-542-4208).

Your participation in this study will contribute to the completion of my doctoral dissertation. The study consists of an online questionnaire that will be administered to individual participants through Hosted Survey, a third party vendor. You will be asked to provide answers to 24 questions related to teacher beliefs and 10 additional demographic questions. The online questionnaire will take approximately 10 minutes to complete. Your responses will be confidential, however, there is a limit to the confidentiality that can be guaranteed due to the technology itself. Your participation is entirely voluntary. Your contact information was obtained through UGA Department of Workforce Education records. You must be 18 years of age or older to participate in this study. You can refuse to participate or stop participating at any time without penalty or loss of benefits to which you are otherwise entitled. You may skip any questions that you are not comfortable answering. The completion and submission of the questionnaire will indicate your willingness to participate in this research.

Participation in this research study will not benefit you directly, however, it may lead to information that could help inform the researcher of any suggestions for Career and Technical Education teacher preparation courses; therefore possibly impacting future CTE teacher preparation.

You are one of a very small number of teachers being asked to participate in this study. In order for the study to truly represent the beliefs of career and technical educators, it is very important that you take a moment to complete the questionnaire. If you would prefer a hard copy of the questionnaire please email or call me and I will mail it to you. You may request a copy of the final report of the study's findings. If you have any questions do not hesitate to contact Renee Smith by email at rjsmith@uga.edu or call 770-554-6151.

To participate in the study, please click the following "begin questionnaire" hyperlink, answer the 34 questions on the questionnaire, and click submit. Thank you for taking the time to help me complete my dissertation. I truly appreciate your time and willingness to participate in this research study.

If you need assistance or have questions while taking this questionnaire, please contact:

Renee Smith
rjsmith@uga.edu
(770) 554-6151

Begin Questionnaire

If you are resuming this survey, please enter your return code here:_____