JACQUELINE SARA DEIGHTON HUFFMAN
Stages Of Concern Toward The Career And Technical Education Standards For National Board Certification
(Under the Direction of CLIFTON L. SMITH)

In response to national reports calling for reform in education, the National Board of Professional Teaching Standards (NBPTS) has established standards for career and technical teachers to become National Board Certified in Career and Technical Education, which can be considered an innovation. Since individual teachers have a great deal of control over the implementation of educational innovations, their concerns toward these innovations are of significant importance.

The purpose of this study was to determine the stages of concern of secondary career and technical educators in the state of Georgia toward Career and Technical Education Standards for Board Certification. The following research questions were used to guide the study:

Research Question One

What is the summary group profile of secondary career and technical education teachers in Georgia toward the Career and Technical Education Standards for National Board Certification as measured by the Stages of Concern Questionnaire?

Research Question Two

Is the Georgia secondary career and technical teacher's peak Stage of Concern toward the Career and Technical Education Standards for National Board Certification as measured by the Stages of Concern Questionnaire dependent on the teacher's (a) career and technical teaching field, (b) years of teaching experience and, (c) highest educational degree held?

The data was collected by sending the Stages of Concern Questionnaire (Hall & George, 1979) to a random sample of 529 secondary Georgia career and technical education teachers. A pilot study was performed to determine contents of the survey package and a follow-up study was completed to confirm that nonresponse bias had not altered the results.

The data from the SoC Questionnaire indicated that Georgia secondary career and technical teacher's highest stage of concern is Stage (0) and there were no significant differences based on career and technical education field, years teaching, and highest educational degree.

INDEX WORDS: NBPTS, Career and Technical Education, and Stages of Concern

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by

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ABJ, The University of Georgia, 1991

M.Ed., The University of Georgia, 1994

A Dissertation Submitted to the Graduate Faculty of

The University of Georgia

in Partial Fulfillment of the Requirements for the Degree

DOCTOR OF EDUCATION

ATHENS,GEORGIA

2001

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August 2001

ACKNOWLEDGEMENTS

The completion of a doctorate degree is an enormous undertaking. I extend my appreciation to a number of people who enabled me to complete this dissertation.

My sincere gratitude and appreciation is extended to Dr. Cliff Smith, my doctoral advisor. He encouraged me to begin the doctoral program and never stopped believing I could finish. Dr. Smith is dedicated to his profession and his students and has served as a role model for me for over ten years. I will always be grateful for his time and his patience.

I would also like to thank Dr. Elaine Adams for her encouragement and understanding. Her positive outlook, willingness to listen, and research expertise helped me to get over many hurdles.

A special thank you is extended to Dr. Helen Hall for always encouraging and believing in me. Your wonderful smile and laughter brightened my day.

I also like to thank my other committee members, Dr. Richard Lynch and Dr. Jay Rojewski. I am very grateful for their time and expertise.

I have been very fortunate to work with outstanding individuals who have encouraged and inspired me. I would like to thank all of my colleagues, especially Dr. Judy Tuggle, Dr. Percy Mack, Dr. John Green, Dr. Liz Rieken, Donna Powers, and Snowdell Jackson.

I would like to thank my husband Kenny, my parents, Alan and Lynda Deighton, my sister, Kathy Watts, and my grandmother, Dorothy Minto, for always encouraging and supporting me.

This dissertation is dedicated to my wonderful husband, Kenny. You were my partner in this endeavor and share this degree with me. In fact, you spent almost as much time in Athens as I did! I will forever be grateful for your kindness, understanding, encouragement, and love.

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CHAPTER 1

INTRODUCTION

The United States' economy and workforce changed dramatically in the last half of the 20th century. The technological revolution and globalization have altered the skills needed for success in the workplace (National Board for Professional Teaching Standards, 2000a; Wise, 1996). National reports suggest that American high school students are not reaching levels of achievement needed to succeed in the new global economy (Education Commission for the States, Task Force on Education for Economic Growth, 1983; National Commission on Excellence in Education, 1983).

Subsequent reports examined how students were educated and focused on the relationship between teacher preparation and student achievement (American Association of Colleges for Teacher Education, 1985; Carnegie Forum on Education and the Economy, 1986; Holmes Group, 1986). One of the greatest factors in determining a student's performance is the preparation of his or her teachers (Darling-Hammond, 2000; National Commission on Teaching and America's Future, 1996). If one of society's goals is to change the educational outcomes for today's students, the methods that

have been used to prepare teachers must be changed (Hartley, Mantle-Bromley, & Cobb, 1996).

One possible approach to change teacher preparation is through the professionalization of teaching (Clifford & Guthrie, 1988; Corrigan & Haberman, 1996; Darling-Hammond, 1990; Wise, 1996). Vocations viewed as professions share similar characteristics such as a common knowledge base, rigorous training to acquire the knowledge and skills necessary to practice the profession, and high standards for entry into the profession (Shanker, 1996). Most professionals (e.g., doctors, accountants, architects, and lawyers) are each educated in similar ways so that they meet the same standards before they are admitted to their respective practice. However, teachers do not all have the same training and some do not even meet minimum state standards before they are allowed into the classroom. The National Commission on Teaching and America's Future (1996) reported that nearly 25% of newly hired teachers lack the qualifications for their jobs and over 12% of new hires enter the classroom without any formal training at all. Even though no state will allow a person to write wills, perform manicures, or fix plumbing without completing training and passing an examination, over 40 states allow

schools to hire teachers who have not met fundamental requirements.

In an effort to professionalize teaching, sets of interconnected standards have been developed by the National Council for Accreditation of Teacher Education (NCATE, 1997), Interstate New Teacher Assessment and Support Consortium (INTASC, 1991), and the National Board for Professional Teaching Standards (NBPTS, 2000). The standards suggest different expectations for teacher candidates, beginning teachers, and accomplished teachers and are interconnected because they are intended to outline a continuum of teacher development throughout a career. NCATE starts with standards for teacher education, INTASC continues through beginning teacher licensing, and the continuum culminates in the NBPTS' advanced certification of master teachers (Darling-Hammond, 2000; National Commission on Teaching & America's Future, 1996).

One challenge in creating standards for teachers is the diversity of each discipline. General academic educators (e.g. math, science, English) have traditionally been held to different standards for certification or licensure than career and technical educators (agriculture education, business education, family and consumer sciences education, health occupations education, marketing

education, technology education, and trade and industrial occupations education; Hartley et al., 1996).

Many groups have created standards for teachers. These standards are intended to raise the level of preparation of teachers and, since a teacher's performance is a predictor of a student's performance (Lynch, 1996), raise the level of a student's achievement. Therefore, a highly accomplished teacher should have the ability to develop highly accomplished students.

One group that has created standards for highly accomplished teachers is the NBPTS. James Hunt, the chair of the NBPTS, stated "The single most important action the nation can take to improve the learning of children is to strengthen the professionalism of teachers" (Hamsa, 1998, p. 252). Professionalizing the teaching field by setting high standards for accomplished teachers (Wise, 1996) is one method to improve teacher, and therefore, student performance.

The NBPTS (1997) bases all subject area standards on five core propositions that are grounded upon years of cumulative research on teaching and learning. The NBPTS has created propositions that guide standards for both general academic teachers and career and technical teachers. The propositions are:

> (a) teachers are committed to students and their learning, (b) teachers know the subjects they teach and how to teach those subjects to students, (c) teachers are responsible for managing and monitoring student learning, (d) teachers think systematically about their practice and learn from experience, and (e) teachers are members of learning communities. (NBPTS, 1997, p. 1)

The Career and Technical Education Standards for National Board Certification, formerly called Vocational Education Standards for National Board Certification, have been available since 1997. The NBPTS published specific standards to identify a board certified teacher in career and technical (originally titled vocational) education. To be eligible, a teacher must hold a baccalaureate degree, must have a minimum of three years of teaching experience, and, where it is required, hold a state teaching license. The 13 standards that a career and technical teacher must meet are based on the NBPTS' five core propositions that also guide those of a general educator and provide for the wide variety of fields embraced by career and technical education. The Career and Technical Education Standards for National Board Certification are listed in Appendix A.

Teachers and other professionals frequently are expected to change the way they provide services for children. New legislation, procedural changes, theoretical developments, and philosophical shifts all contribute to changes in the way professionals think and act (Bailey & Palsha, 1992). Although professionals can and do make internal changes to how they practice, oftentimes the call for change comes from external sources. These innovations are many times mandated through administrative channels.

The National Board Certification process has been described since 1997. However, only recently have evaluation procedures been finalized and published (NBPTS, 2000). Therefore, the administrative channel through which vocational teachers can access this innovation has been established. By providing new ways for teachers to improve their skills, ultimately affecting students, the national certification process is an innovation.

Understanding and describing the process of change, while at the same time maintaining sight of the individual, is a challenging task for managers of the change process. A model of the complex process of change as it occurs through the adoption of innovations by individuals within formal educational organizations was first conceptualized by Hall and George(1979). This model, the Concerns-Based Adoption

Model (CBAM), has as one component, a diagnostic tool for assessing where the individual members of an organization are in relation to the adoption of an innovation. Concerns about the change (the innovation) are considered to be an important dimension of the change process.

Individual teachers' concerns toward the innovation are important because they have a great deal of control over the implementation of the innovation (Hall & George, 1979). Since standards for teachers are one of the major issues of current education movements, determining concerns of career and technical teachers towards the National Board Standards for Career and Technical Education would be important for successful implementation of the standards as an innovation. These diagnostic data then can be used to develop a prescription for needed interventions to help facilitate the change effort (Hall, George, & Rutherford, 1998).

The CBAM diagnostic tool designed to measure the concerns of teachers toward an innovation is the Stages of Concern (SoC) questionnaire. This instrument explores the concerns educators have about an innovation from the first time they become aware of it until they have mastered it. Concerns are assumed to progress in a sequence of stages. Early concerns first

deal with self. Concerns dealing with tasks follow and the final stage is concerns about the impact of the innovation on others (Hall et al., 1998).

The SoC questionnaire can be used as a diagnostic tool for assessing concerns of teachers toward adoption of the Career and Technical Education Standards for National Board Certification innovation. As stated previously, teachers' concerns toward innovations are of considerable importance because teachers have a great deal of control over the implementation of educational innovations. Standards for teachers have been identified as one important factor in the effort to professionalize the teaching profession and ultimately improve student performance.

Purpose of Study

The purpose of this study was to determine the stages of concern of secondary career and technical educators in the state of Georgia toward career and technical standards introduced by the National Board for Professional Teaching Standards (NBPTS, 1997). Knowledge of the stages of concern about this educational innovation was measured by the Stages of Concern questionnaire (Hall et al., 1998), a diagnostic tool of the Concerns-Based Adoption Model.

Research Questions

This study addressed the following research questions:

Research Question One

What is the summary group profile of secondary career and technical education teachers in Georgia toward the Career and Technical Education Standards for National Board Certification as measured by the Stages of Concern Questionnaire?

Research Question Two

Is the Georgia secondary career and technical teacher's peak Stage of Concern toward the Career and Technical Education Standards for National Board Certification as measured by the Stages of Concern Questionnaire dependent on the teacher's (a) career and technical teaching field, (b) years of teaching experience, and (c) highest educational degree held?

Assumptions

1. Attaining National Board Certification in Career and Technical Education is an example of an educational innovation.
2. The National Board for Professional Teaching Standards for Career and Technical Education reflect the knowledge and skills of a master teacher in career and technical education (NBPTS, 2000).

3. The teachers' responses to the SoC questionnaire items are assumed to be honest.

Delimitations

1. The population of this study was limited to teachers employed as secondary career and technical teachers in Georgia during the 1999-2000 school year.
2. The NBPTS classified Career and Technical teachers into eight categories that are not identical to the seven categories identified by the Georgia Professional Standards Commission (GPSC, 1997; NBPTS, 2000).
3. A low response rate of selected sample (26%) was attained in this study.

Theoretical Framework

Favorable student outcomes are positively related to a teacher's formal education and professional training (Darling-Hammond, 2000; Lynch 1996). The National Commission on Teaching and America's Future (1996) states that "teacher expertise is the single most important factor in determining student achievement and that fully trained teachers are far more effective with students than those who are not prepared" (p. 12). The general areas of teacher knowledge identified by the literature suggest that teaching is not common sense--certain bodies of knowledge

must be learned (Darling-Hammond, Wise, & Klein, 1995; Grossman, 1990; Shulman, 1986).

Efforts to improve teacher preparation, and in turn student achievement, have focused on professionalizing the teaching profession (Clifford & Guthrie, 1988; Wise & Leinbbrand, 1996). Vocations that are viewed as professions share similar characteristics; a common knowledge base, rigorous training to acquire the knowledge and skills necessary to practice the profession, and high standards for entry into the profession (Shanker, 1996). Most professionals (e.g., doctors, accountants, architects, and lawyers) are each educated in similar ways so that they meet the same standards before they are admitted to their respective practice. However, teachers do not all have the same training and some do not even meet minimum standards before they are allowed into the classroom. According to Shanker (1996), “Many of the attributes that characterize a profession are not hallmarks of today’s teaching profession” (p. 220).

If teaching is to be regarded as a true profession with appropriately prepared members, four elements must be present: (a) an accepted knowledge base; (b) resources; (c) conditions of practice; and (d) quality controls (Corrigan & Haberman, 1996). Of these four elements, the need for

quality controls through the establishment of standards is a re-occurring theme in the professionalization of teaching (Clifford & Guthrie, 1988; Darling-Hammond, 2000; Shanker, 1996; Wise, 1999).

Many groups and individuals have developed standards for teachers in various stages of their teaching careers. One such group, the NBPTS (2000), recently published standards for highly accomplished teachers to become Board Certified in career and technical education.

A recent study (Bond, Jaeger, Smith, & Hattie, 2000) has shown that a student whose teacher is National Board Certified demonstrates greater learning skills than a student whose teacher is not National Board Certified. Therefore, high standards for accomplished teachers may result in higher academic achievement for their students.

Definitions

For this study, the following definitions were operationally defined:

Concern. The mental activity composed of questioning, analyzing, and anticipating consequences (Hall et al., 1979).

Concerns-Based Adoption Model. A model based on research about educational dissemination and change (Hall & George, 1979). The model is premised on the assumption that

change is an ongoing, personal experience and was developed for describing the concerns that professionals may have about an innovation (Bailey & Palsha, 1992).

Innovation. Any process or product that is new to a potential user (Hall & George, 1979).

Stages of Concern. Categories of concern identified by adopters of innovations as refocusing, collaboration, consequence, management, personal, informational, and awareness (Hall et al., 1998).

Significance of Study

Standards for teachers are a major component of education reform initiatives (National Commission on Teaching and America's Future, 1996). Former President Bill Clinton addressed the issue of standards; specifically naming the NBPTS for establishing nationally accepted credentials for excellence in teaching (Rotberg, Futrell, & Lieberman, 1998). In order to encourage teachers to accept and adopt the national standards as their own, methods for providing ways for teachers to obtain these credentials is necessary. Of specific significance is how those who are being encouraged to obtain the certification perceive these methods. NBPTS certification is an educational innovation. There will be concerns about how the innovation affects individuals and the practice of vocational education.

Unless these concerns are measured, those who develop the processes by which the innovation is adopted may not be able to set policy and implement the innovation.

Summary

Educators are facing reform movements that will improve the performance of students. One component of the education reform movement is the professionalization of teaching through the establishment of accepted standards.

Many organizations have proposed standards for teachers (Darling-Hammond, 2000; INTASC, 1991; NBPTS, 2000; National Commission on Teaching & America's Future, 1996). One highly recognized organization is the National Board for Professional Teaching Standards. Recently, the National Board for Professional Teaching Standards published the Career and Technical Education Standards for National Board Certification. Individual teachers can influence the implementation of this innovative certification process. Their concerns about this innovation can determine if it is adopted (Hall, 1979). One appropriate instrument to measure the levels of concern of career and technical teachers toward the Career and Technical Education standards for National Board Certification is the Stages of Concern Questionnaire, a diagnostic tool of the Concerns-Based Adoption Model (Hall et al., 1998).

CHAPTER 2

REVIEW OF THE LITERATURE

This chapter provides a review of literature and related research dealing with the historical preparation of teachers, the reform movements in teacher preparation, and the Concerns-Based Adoption Model. The major objectives for this review were to:

1. Describe the historical preparation of general academic and career and technical teachers in the United States.
2. Identify reform movements in the preparation of general academic and career and technical teachers in the United States.
3. Describe the Concerns-Based Adoption Model and related instrumentation.

Historical Preparation of Teachers

Many factors have had an effect on the preparation of teachers in the United States. A succession of events, including wars, recessions, depressions, expansions, technological advances, and philosophical agendas have shaped the methods in which educators are prepared for the classrooms in public education.

Preparation of General Educators

The preparation of teachers in the United States has evolved slowly. During the period that includes the colonial days to the late-1800s, teachers were not required to have formal training (Urban, 1990). The expectation for teachers was the completion of formal school training comparable to the level of teaching. For example, elementary school teachers were expected to have completed elementary school. Teachers were expected to instruct students about morals and community values, while also teaching basic skills in reading, writing, and mathematics (Schwartz, 1996).

After the civil war, expectations for teachers changed due to the needs of a developing industrial economy (Schwartz, 1996). Educational leaders and administrators attempted to professionalize teaching in order to accommodate the change from an agrarian economy to an industrial society (Imig & Switzer, 1996).

The public normal schools were developed in the early to mid-1800s to meet the growing demand for teachers and to provide teachers for the common or public school (Goodlad, 1990; Urban, 1990.) In most normal schools, sufficient training for elementary school teachers included several methods courses in reading, mathematics, and social

studies, and student teaching. A very minimal number of liberal arts courses were required. Secondary school teachers were recruited mostly from liberal arts colleges. These recruits had many more courses in the arts and sciences (Clifford & Guthrie, 1988). Urban (1990) also points out that many students who attended the normal schools had no intention of teaching but had no other place in the community to gain a post-secondary education in areas of their interest; therefore, they attended the normal school by default.

During the early 1900s to the 1940s, the normal school expanded the curriculum for teacher preparation to include additional work in pedagogy, theories of learning, and the social sciences (Schwartz, 1996). Clifford and Guthrie (1988) refer to this time as the formative years of schools or colleges of education and the start of professionalized teaching. Through normal schools, the study of pedagogy was advanced (Schwartz, 1996). The United States Office of Education’s first national survey of the education of teachers, conducted in the 1930s, confirmed the importance of normal schools in extending pedagogical training (Clifford & Guthrie, 1988).

Normal schools developed into four-year teacher’s colleges that granted bachelor’s degrees in education by

the start of World War II (Sarason, Davidson, & Blatt, 1986). By the time the war ended, teacher's colleges had become part of the comprehensive state university system and teacher preparation programs were consolidated into schools or colleges of education offering bachelor's, master's, and doctoral degrees (Schwartz, 1996). Teacher education programs slowly began to resemble traditional arts and science programs and consisted of a general education requirement, a subject matter concentration, and a limited culminating clinical experience in the public schools. By the early 1960s, teacher education programs generally consisted of educational history and philosophy courses, child development courses, general and specialized methods courses, and student teaching (Goodlad, 1990).

For over 100 years, the model for teacher education has remained relatively constant (Clifford & Guthrie, 1988; Imig & Switzer, 1996; Luft, Zimmerer, & Kercher, 1988). Teachers are prepared in regional public universities, liberal arts colleges, major public and private colleges, and regional private universities (Goodlad, 1990). Students are granted bachelor's degrees in education after taking a mix of courses that stress the fundamentals of the discipline they will be teaching; education courses concentrating on learning, teaching and child development;

and participation in some type of supervised practice experience (Darling-Hammond et al., 1995). The typical baccalaureate program consists of splitting time between course work in the field to be taught (i.e., English, science, etc.) and education courses that focus on pedagogy (Scannell, 1986). The American Association of Colleges for Teacher Education (1985) describes the traditional four-year teacher education model as one and one-half years of general education, one and one-half years of teaching field(s) content, and one year of professional studies and clinical experiences.

Preparation of Career and Technical Teachers

The first major act designed to provide for career and technical education was the Smith-Hughes Act of 1917 (Barlow, 1976). The act provided funding for secondary vocational education, currently named career and technical education, in agriculture, trades, home economics, and industry, and for teacher training in each of these fields (Lannie, 1971). To administer the provisions of the act, a Federal Board for Vocational Education was created in July of 1917.

The philosophical arguments between Charles Prosser and John Dewey originally defined how career and technical teachers were prepared. Prosser believed that tradesmen

would be more effective at teaching career and technical education than professionally prepared teachers. Career and technical instructors should be trainers rather than educators (Wirth, 1980). Prosser believed that there was a positive correlation between student learning outcomes and teachers' occupational experience. The more work experience a teacher had, the better the student would perform. Therefore, formal training to teach was not needed, or required, for career and technical teachers.

In sharp contrast to Prosser, John Dewey believed that professional training through institutions of higher learning was more important than trade experience. Dewey believed that a positive correlation existed between the amount of time instructors had spent in general education courses and the abilities of their students (Lynch, 1996).

The Federal Board of Vocational Education, for which Prosser was Executive Director (Wirth, 1980), intentionally alienated and divided academic education from career and technical education by creating different guidelines and standards for career and technical teachers (Walter, 1993). One example of the division occurred in 1917 when the Board established alternative measures for certifying vocational teachers because it believed that career and technical education teachers were incapable of meeting standards set

by higher institutions of learning (Lynch, 1996). Career and technical education was defined as programs leading to less than a baccalaureate degree (Lannie, 1971), so it seemed to make sense that career and technical teachers did not need a college degree either.

Prosser and the Federal Board were also convinced that career and technical teachers could not be properly prepared by colleges. One reason for this included Prosser's belief that the most important factor in a teacher's success was trade experience, not college education. Therefore, Prosser felt that colleges were not capable of contributing to the professional training of career and technical teachers (Lynch, 1997). However, Prosser and the Federal Board did seem to believe that a few areas, such as agricultural and home economics education, could be taught in institutions of higher learning (Lynch, 1996).

During the decades since the original actions of Prosser and the Federal Board, the division between traditional teacher preparation and career and technical teacher preparation has remained. While general (i.e., English, math, science) teachers must have a college degree before entering the teaching profession, some career and technical teachers (i.e., trade and industrial) do not.

Forty-three states allow alternative certification of career and technical teachers (i.e., health occupations teachers, technical occupations teachers, trade and industrial teachers) who have extensive occupational experience but have not completed college degree requirements (Hartley, Mantle-Bromley, & Cobb, 1996; Lynch, 1996, 1997). Certain career and technical areas, such as agricultural education, family and consumer sciences (formerly home economics education), marketing education, business education, and technology education do depend on college-level teacher preparation but still include practical experience and employment experience (Lynch, 1996).

In summary, the preparation of general educators over the past 200 years has evolved from being nearly totally unstructured to having a definite structure based in academic knowledge and pedagogy. In contrast, the preparation of career and technical teachers has taken a different path that required considerable experience in the field to be taught--knowledge of teaching methods and pedagogy was not considered a major component of preparation.

Reform Movement of Teacher Preparation

National reports, such as A Nation At Risk (National Commission on Excellence in Education, 1983) and Action for Excellence: Comprehensive Plan to Improve Our Nation's Schools (Education Commission for the States, Task Force on Education for Economic Growth, 1983), brought attention to the condition of education in the United States. In many comparisons of student academic achievement, American students finished last and millions of American adults were functionally illiterate (National Commission on Excellence in Education, 1983). College entrance examination scores had declined for over a decade (Sikula, 1990).

A second round of national reports, including A Nation Prepared: Teachers for the 21st Century (Carnegie Forum on Education and the Economy, 1986), Tomorrow's Teachers (The Holmes Group, 1986), A Call for Change in Teacher Education (American Association of Colleges for Teacher Education, 1985), and Improving Teacher Education: An Agenda for Higher Education (Southern Regional Education Board, 1985, were published in response to the first round of reports initiated by A Nation At Risk. The focus of this second group of reports was the redesign of teacher preparation and forced educators to seriously consider the methods in which teachers have traditionally been prepared (Goodlad,

1990; Kochan & Kunkel, 1998). In order to be effective, teacher preparation programs must meet society's changing demands (Luft et al., 1988). According to Hartley et al. (1996), if society's goal is to change the educational outcomes for today's students, the methods that have been used to prepare teachers must also be changed.

The emphasis on teacher preparation is one reaction to research from the past 30 years that a student will be more successful if his or her teacher is properly prepared (Darling-Hammond, 1999; Hickok, 1998). The National Commission on Teaching and America's Future (1996) states that "teacher expertise is the single most important factor in determining student achievement and that fully trained teachers are far more effective with students than those who are not prepared" (p. 12). The general areas of teacher knowledge that are identified by the literature in this field suggest that teaching is not common sense--certain bodies of knowledge must be learned (Darling-Hammond et al., 1995; Grossman, 1990; Shulman, 1986, 1987).

Reform Movement of General Teacher Preparation

One of the main issues in education reform is the training of teachers. In order to ensure quality in teaching, the methods that are used in the preparation,

licensing, and continuing development of teachers should be evaluated (Wise, 1996).

A general theme in the literature dealing with teacher preparation is the need to professionalize teaching (Clifford & Guthrie, 1988; Corrigan & Haberman, 1996; Darling-Hammond, 1990; Wise, 1996). Shanker (1996) stressed the importance of enhancing the professionalism of today's teachers and stated that teaching will be considered a true profession when (a) an acknowledged body of knowledge underpins teacher education, (b) training for those wishing to enter is precisely defined, (c) knowledge and training to enter teaching can only be acquired through rigorous training, (d) conditions in the workplace are determined largely by teachers themselves, (e) evaluation of teacher performance with an opportunity to remove teachers who do not meet set levels of performance, (f) continuous learning of teachers is required, (g) teacher induction is provided in a rigorous and consistent manner, and (h) teachers have the respect of society. Corrigan and Haberman (1996) name four critical elements of a profession: (a) knowledge base, (b) quality controls, (c) resources, and (d) conditions of practice. In order to professionalize teaching, Wise (1996) supported a system of quality assurance based on the accreditation of institutions that prepare teachers,

performance-based initial licensing, and certification of accomplished teachers. The teaching profession would be responsible for developing and supporting these standards.

Reform Movement of Career and Technical Education Teacher Preparation

The mass of reform reports that focused attention on education in the United States also articulated problems within the American education system that could threaten the American economy. Undereducated workers are not prepared to join the ranks of the high tech workforce. The skills that they need to survive in a knowledge-based economy and an increasingly multicultural society are not being taught in public schools (Darling-Hammond, 2000). As a result, many of the reports “confirmed that a gap existed between the current skills of the workforce and levels of those skills needed by industry” (Hartley et al., 1996, p. 23).

The literature suggested that there is a relationship between the need to improve the preparation of youth for successful entry into the world of work and career and technical education reform. Reports such as *Workforce 2000* (Johnston & Packer, 1987) and *The Forgotten Half* (Commission on Work, Family, and Citizenship, 1988) emphasize the need to prepare students who will not earn a

baccalaureate degree for technically demanding jobs. Traditionally, these are the students who are classified as career and technical.

Research shows that the amount of formal education a teacher possesses is a positive predictor of successful student outcomes (Lynch, 1996). Therefore, if the outcomes of career and technical students are to be improved, the preparation of career and technical teachers also must be improved.

In order to improve the preparation of career and technical teachers, career and technical educators are being encouraged to professionalize their discipline. Lynch (1996) identified the major elements of a profession as the ability of its members to

> (a) establish requirements for the entry and training in the field; (b) define the nature of the work, the structure of the job, and the authority that governs it; (c) identify and codify a knowledge base; (d) develop and monitor accountability measures; (e) enforce a code of ethics with special concern for clients; and (f) prepare practitioners to exercise a great deal of autonomy. (p. 15)

Lynch (1996) also stated that “an essential tenet in all reform efforts is to make teaching . . . a respected profession . . . and vocational teacher education should embrace it” (p. 15).

In summary, one important element of reform in all teacher preparation programs, general academic and career and technical, is the professionalization of teaching. This common goal for general academic and career and technical teachers may help to reverse the trend started many years ago by Prosser’s philosophy to separate general academic education and career and technical education.

National Standards for Educators

One of the main characteristics of a profession is the establishment of standards (Wise, 1996). Roth (1996) stated that “the current standards movement in teacher education . . . is emerging as the dominant force of the near future” (p. 271). Many groups have published standards for the preparation, licensure, and certification of all teachers (Darling-Hammond, 2000).

National Standards for General Academic Educators

Teaching is viewed on a continuum with pre-service teachers at one end and master teachers at the other end. Many organizations have created standards to evaluate teachers during each phase of their teaching careers.

National Council for Accreditation of Teacher Education

National Council for Accreditation of Teacher Education (NCATE) serves as the accrediting organization for schools of education and has been working for the past 50 years to improve standards for teacher education (Gardner, Scannell, & Wisniewski, 1996). NCATE accredited institutions must prove that that they prepare teachers to teach to the standards developed by educators and organizations. Institutions also must prove that they prepare teachers to meet new licensing standards developed by INTASC and the NBPTS. About 500 of 1,200 teacher education programs have received professional accreditation through NCATE (National Commission on Teaching & America's Future, 1996).

National accreditation is one of the main goals for NCATE. Currently, there is not one accepted set of standards for the licensing of teachers in every state. Each state sets its own requirements for initial teacher licensure. National accreditation could establish a national standard instead of the numerous individual requirements that vary from state to state (Gardner et al., 1996). By requiring institutions to meet certain guidelines, NCATE is able to reinforce the importance of the Interstate New Teacher Assessment and Support

Consortium (INTASC) standards and the National Board for Professional Teaching Standards (NBPTS).

Interstate New Teacher Assessment and Support Consortium

Formed in 1987, the Interstate New Teacher Assessment and Support Consortium (INTASC) is a consortium of more than 30 states and professional organizations. INTASC has attempted to identify the knowledge and skills a teacher needs to meet communities' expectations that every student learn and perform.

The INTASC task force concentrated on establishing a common core of teaching knowledge and skills, including "knowledge of student learning and development, curriculum and teaching, contexts and purposes which creates a set of professional understandings, abilities, and commitments that all teachers share" (INTASC, 1991, p. 2). After the core requirements were defined, INTASC planned to articulate additional standards for each specific discipline.

The standards are intended to describe the requirements for beginning teachers and also to guide the careers of all teachers by describing the goals toward which they should strive. According to Ambach (1996), "the approach used by INTASC is based on a holistic conception of career development for teaching professionals" (p. 208).

The standards developed by INTASC focus on what a teacher should know and be able to do. Therefore, the challenge for the group was to develop standards that were performance based. The standards were developed in response to the National Board for Professional Teaching Standards' five guiding propositions and are intended to be Board-compatible (INTASC, 1991).

The 10 INTASC standards are as follows:

1. The teacher understands the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches and can create learning experiences that make these aspects of subject matter meaningful for students.

2. The teacher understands how children and youth learn and develop and can provide learning opportunities that support their intellectual, social, and personal development.

3. The teacher understands how learners differ in their approaches to learning and creates instructional opportunities that are adapted to learners from diverse cultural backgrounds and with exceptionalities.

4. The teacher understands and uses a variety of instructional strategies to encourage the students'

development of critical thinking, problem solving, and performance skills.

5. The teacher uses an understanding of individual and group motivation and behavior to create a learning environment that encourages positive social interaction, active engagement in learning, and self-motivation.

6. The teacher uses effective verbal, non-verbal and media communication techniques to foster active inquiry, collaboration, and supportive interaction in the classroom.

7. The teacher plans and manages instruction based upon knowledge of subject matter, students, the community, and curriculum goals.

8. The teacher understands and uses formal and informal assessment strategies to evaluate and ensure the continuous intellectual, social, and physical development of his/her learners.

9. The teacher is a reflective practitioner who continually evaluates the effects of her/his choices and actions on others and who actively seeks out opportunities to grow professionally.

10. A teacher communicates and interacts with parents/guardians, families, school colleagues, and

> the community to support the students' learning and well being. (Darling-Hammond et al., 1995, p. 43)

National Board for Professional Teaching Standards (NBPTS)

The Carnegie Task Force on Teaching as a Profession in its 1986 report, *A Nation Prepared*, called for the creation of a national board to set professional teaching standards for experienced teachers. The NBPTS was created the next year with the support of state governors, teacher unions, school board members, business executives, foundations, college officials, and university officials.

Dr. Lee Shulman, president of the Carnegie Foundation for the Advancement of Teaching, described the creation of the NBPTS as an outcome of the Carnegie initiative for reform of the teaching profession. The National Board was designed to be parallel in several ways to the National Board of Medical Examiners (Shulman & Sykes, 1986). Shulman (1986) stated that the NBPTS would base standards on three factors:

> (a) Standards will be closely tied to the findings of scholarship in the academic disciplines that form the curriculum (such as English, physics, and history) as well as those that serve as foundations for the process of education (psychology, sociology, or philosophy); (b) standards must possess intuitive

> credibility (or “face validity”) in the opinions of the professional community in whose interests they have been designed; and (c) standards must relate to the appropriated normative conceptions of teaching and teacher education. (p. 5)

The Board is comprised of 63 members who form the Board of Directors (NBPTS, 1997). Teachers make up the majority of the Board’s members. Other members include scholars in child development, curriculum development, teacher education, and the relevant subject disciplines (Shapiro, 1995). The Board’s mission is

> (a) to establish high and rigorous standards for what accomplished teachers should know and be able to do; (b) to develop and operate a national voluntary system to assess and certify teachers who meet these standards; and (c) to advance related education reforms for the purpose of improving student learning in American schools. (NBPTS, 1997, p.1)

The goal of the NBPTS is to improve student learning by strengthening teaching. Unlike other professions, such as physicians and lawyers, that have clear and objective-based standards for accomplished practice, teaching has never defined the knowledge, skills, and accomplishments

that add up to teaching excellence. In order to arrive at this goal, the NBPTS has set or is in the process of setting advanced standards in more than 30 certificate fields (NBPTS, 2000).

While many organizations focus their efforts on minimal requirements for entry into the teaching profession, the NBPTS focuses on master teachers. In its mission, the Board clearly states that it is focusing on accomplished teachers (NBPTS, 2000). If teaching is seen as part of a continuum, with teacher education at the start, beginning teacher licensing requirements in the middle, and advanced certification at the finish, the NBPTS is concerned with the last.

The NBPTS bases all subject area standards on five core propositions that the Board feels should apply to any teacher.

> (a) Teachers are committed to students and their learning, (b) teachers know the subjects they teach and how to teach those subjects to students, (c) teachers are responsible for managing and monitoring student learning, (d) teachers think systematically about their practice and learn from experience, and (e)

teachers are members of learning communities.

(NBPTS, 2000, p. vi)

The process of becoming a board certified teacher requires a substantial commitment on the part of the applicant. The first step in the assessment process requires the applicant to submit videos, portfolios centered on student work, and other examples of their teaching. The second step requires applicants to complete various exercises at an assessment center, such as evaluating teaching methods, assessment of teaching materials and texts, and evaluating student learning based on student needs, teaching methods, and subject matter (Rotberg, Futrell, Hatwood, & Lieberman, 1998). Also, a fee of over $2,000 is required by the Board (NBPTS, 2000)

Participation and success rates for teachers seeking Board certification are currently low. Between 1993 and 1997, 911 teachers nationwide passed certification requirements. The average success rate from 1993 to 1996 was 35%. In 1997, the success rate rose to 45% (Rotberg et al., 1998). In 1998, more than 1,800 teachers had attained National Board certification (Diez & Blackwell, 1999). By the end of 1999, there were over 5,000 National Board certified teachers (Coeyman, 2000). In 2000, the number of Board certified teachers doubled to nearly 10,000 (NBPTS,

2000b). However, this is less than 1% of the 2.5 million teachers in the United States (U.S. Department of Education, 2001).

In order for participation to grow, the National Commission on Teaching & America's Future recommends that states and local education agencies set goals and enact incentives for National Board Certification in every district with the intention of certifying over 100,000 teachers during the next 10 years (National Commission on Teaching & America's Future, 1996).

The Accomplished Teaching Validation Study (Bond et al., 2000) provided evidence that Board Certified teachers' students showed greater understanding of what was being taught than students whose teachers were not Board Certified. Also, teachers who were certified by the NBPTS significantly outperformed their peers who were not Board Certified on key dimensions of teaching expertise (NBPTS, 2000b).

Monetary rewards for Board Certified teachers are currently low. For example, Georgia offers teachers a 5% raise if they are Board Certified (Ezzard, 2000). Some states, such as North Carolina, provide a pay raise and one-time bonus (Kantrowitz & Wingert, 2000) for teachers who are Board Certified.

Standards for Career and Technical Educators

Many organizations have suggested methods to specifically improve career and technical education. Many of these methods include the creation of standards for career and technical education teachers.

The National Center for Research in Vocational Education (NCRVE)

NCRVE's (1997) mission was to strengthen education to prepare all individuals for lasting and rewarding employment. One of its major efforts is to research performance and standards in career and technical education. Through this research, accountability could be established that would put teaching one step closer toward professionalization.

University Council for Workforce and Human Resource Education (UCWHRE), formerly University Council for Vocational Education (UCVE)

UCWHRE is a nonprofit organization representing the nation's leading universities. The Council provides leadership for teaching, research, and service initiatives in career and technical education. The purposes of UCWHRE are to:

1. Provide a forum for surfacing and debating the contemporary issues significant to career and technical education.
2. Develop positions on emerging trends and issues that have implications for improving the policies and practices of career and technical education in the near future.
3. Improve the capacity of institutions of higher education to shape the direction of career and technical education through teaching, research, and service.
4. Promote awareness and understanding of the significant issues in career and technical education and the University Council's position regarding these issues as well as the capacity of higher education. (UCWHRE, 1998)

The University Council for Vocational Education and the National Association of State Directors of Career and Technical Education Consortium formed a joint task force that published its report in 1995. The report recommended the development of entry-level standards for teachers.

In 1995, UCWHRE co-sponsored a national summit in San Diego where educators discussed reform of career and technical teacher education. One of the major points

discussed was the development and use of standards for career and technical educators (Lynch, 1997).

National Board for Professional Teaching Standards (NBPTS)

In June 1997, NBPTS added eight additional fields as areas within which career and technical teachers should be able to seek National Board Certification as accomplished career and technical education teachers.

The five core propositions from NBPTS undergird all subject areas, including the new standards for career and technical education. The requirements for National Board Certification in Career and Technical Education are organized into 13 standard statements and are as follows:

1. Accomplished career and technical educators are dedicated to advancing the learning and well being of all students. They personalize their instruction and apply knowledge of human development to best understand and meet their students' needs.
2. Accomplished career and technical educators command a core body of general career and technical knowledge about the world of work in general and the skills and processes that cut across industries, industry specific knowledge. They draw on this knowledge to establish curricular goals, design instruction,

facilitate student learning and assess student progress.

3. Accomplished career and technical educators efficiently manage their classrooms and create an environment that fosters democratic values, risk taking and a love of learning. In this environment, students develop knowledge, skills and confidence through contextualized learning activities, independent and collaborative laboratory work, and simulated workplace experiences.
4. Accomplished career and technical educators create an environment where equal treatment, fairness, and respect for diversity are modeled, taught, and practiced by all. They take steps to ensure quality career and technical learning opportunities for all students.
5. Accomplished career and technical educators foster experiential, conceptual and performance-based student learning of career and technical subject matter and create important, engaging activities for students that draw upon an extensive repertoire of methods, strategies, and resources. Their practice is also marked by their ability to integrate career and technical and academic disciplines productively.

6. Accomplished career and technical educators utilize a variety of assessment methods to obtain useful information about student learning and development, to assist students in reflecting on their own progress and to refine their teaching.
7. Accomplished career and technical educators develop student career decision-making and employability skills by creating opportunities for students to gain understanding of workplace cultures and expectations.
8. Accomplished career and technical educators develop in students an understanding of the competing demands and responsibilities that are part of the world of work, and guide students as they begin to balance those roles in their own lives.
9. Accomplished career and technical educators develop in students self-awareness and confidence, character, leadership and sound personal, social and civic values and ethics.
10. Accomplished career and technical educators regularly analyze, evaluate, and strengthen the effectiveness and quality of their practice through life-long learning.
11. Accomplished career and technical educators work with colleagues, the community, business and industry, and

postsecondary institutions to extend and enrich the learning opportunities available to students and to ease school to work transitions.

12. Accomplished career and technical educators work with colleagues and the larger educational community both to improve schools and to advance knowledge and practice in their field.
13. Accomplished career and technical educators work with families and communities to achieve common goals for the education of all students. (NBPTS, 1997, p. 1)

The NBPTS ordered the standards to facilitate understanding and not to assign priorities. The priority of the NBPTS was to organize standards around student learning (NBPTS, 1997). Since the field of career and technical education is extremely varied, the Board created clusters of career and technical areas that shared similar bodies of knowledge but were not so broad that expertise about any one of them is not beyond the grasp of any of the teachers. The eight areas are: (a) agriculture and environmental sciences; (b) arts and communications; (c) business, information management and entrepreneurship; (d) family and consumer sciences; (e) health services; (f) human services; (g) manufacturing and engineering technology; and (h) technology education (NBPTS, 1997, p. 13).

In summary, many organizations are setting standards for teacher education, beginning teacher licensing, and advanced certification. Their combined efforts are creating a continuum of teacher development from preservice to advanced teaching. One group that is focusing on accomplished teachers is the NBPTS. The NBPTS has developed standards for general and career and technical educators to identify accomplished teaching. The standards for career and technical educators are attracting attention because of the relationship between career and technical education and preparing students for the world of work in a global economy.

The Concerns-Based Adoption Model

The Concerns-Based Adoption Model (CBAM) is based on research findings from studies conducted by the University of Texas Research and Development Center during the late 1970s and early 1980s about educational dissemination and change (Hall & George, 1979). The model is premised on the assumption that change is an ongoing, personal experience and was developed for describing the concerns that professionals may have about an innovation (Bailey & Palsha, 1992). The definition of the concept of “concerns” follows:

The composite representation of the feelings, preoccupation, thought, and consideration given to a particular issue or task is called concern. Depending on our personal make-up, knowledge, and experiences, each person perceives and mentally contends with the given issue differently; thus there are different kinds of concerns. The issue may be interpreted as an outside threat to one's wellbeing, or it may be seen as rewarding. There may be an overwhelming feeling of confusion and lack of information about what "it" is. There may be ruminations about the effects. The demand to consider the issue may be self-imposed in the form of a goal or objective that we wish to reach, or the pressure that results in increased attention to the issue may be external. In response to the demand, our minds explore ways, means, potential barriers possible actions, risks, and rewards in relation to the demand. All in all, the mental activity composed of questioning, analyzing, and anticipating consequences is concern. An aroused state of personal feelings and thought about a

> demand as it is perceived is a concern. (Hall et al., 1979, p. 5)

The Stages of Concern About the Innovation is one dimension of the CBAM that is grounded in conceptual literature and field experience which attempt to describe the personal aspects of change (Hall & George, 1979). The Stages of Concern About the Innovation explores the concerns participants have about an innovation from the first time they become cognizant of it until they have mastered it. The Stages of Concern (SoC) are (a) Stage 0--Awareness (b) Stage 1--Informational (c) Stage 2--Personal (d) Stage 3--Management (e) Stage 4--Consequence (f) Stage 5—-Collaboration and (g) Stage 6--Refocusing. The definition of each stage is explained in Figure 1.

#	Stage	Description
0	Awareness	Little concern about or involvement with the innovation is indicated.
1	Informational	A general awareness of the innovation and interest in learning more detail about it is indicated. The person seems to be unworried about herself/himself in relation to the innovation. She/he is interested in substantive aspects if the innovation in a selfless manner such as general characteristics, effects, and requirements for use.
2	Personal	Individual is uncertain about the demands of

		innovation, her/his role in relation to the reward structure of the organization, decision making, and consideration of potential conflicts with existing structures of personal commitment. Financial status implications of the program for self and colleagues may also be reflected.
3	Management	Attention is focused on the processes and tasks of using the innovation and the best use of information and resources. Issues related to efficiency, organizing, managing, scheduling, and time demands are utmost.
4	Consequence	Attention focuses on impact of the innovation on students in her/his immediate sphere of influence. The focus is on relevance of the innovation for students, evaluation of the outcomes, including performance and competencies, and changes needed to increase student outcomes.
5	Collaboration	The focus is on coordination and cooperation with others regarding use of the innovation.
6	Refocusing	The focus is on exploration of more universal benefits from the innovation, including the possibility of major changes or replacement with a more powerful alternative. Individual has definite ideas about alternatives to the proposed or existing form of the innovation.

Source: Measuring the Stages of Concern About the Innovation: A Manual for Use of the SoC Questionnaire, (p.7) by G. E. Hall, A. A. George, and W. L Rutherford, 1998, Austin, TX: Southwest Educational Development Laboratory. Copyright 1998 by Southwest Educational Development Laboratory. Reprinted with permission by the Southwest Educational Developmental Laboratory (Appendix C).

Figure 1

Stages of Concern About the Innovation

Concerns are assumed to progress in an approximation of the sequence of stages described. Early concerns first deal with self. Concerns dealing with tasks follow and, finally, concerns about the impact of the innovation on others.

SoC is a tool used by researchers, evaluators, and change facilitators to gather information about individuals as they are involved in change. Hall and George (1979) stressed the role of the individual as key in understanding, studying, and managing the change process in organizations. In order to understand the fate of a new program in any given situation, it is essential to focus on the individuals involved. The personal side to organizational change includes separate individuals that experience a wide range of emotions and personal feelings when confronted with new ideas or innovations.

Development of the Stages of Concern Questionnaire

The first pilot instrument to assess the concerns of individuals about a specified innovation was designed in 1973 and consisted of an open-ended concerns statement and a forced ranking. By 1974, the primary method to identify stages of concern was a quick-scoring pencil and paper questionnaire consisting of 195 items. The questionnaire was reduced to 35 items by selecting from among the

strongest items representing each of the factors (George, 1977; Hall et al., 1979). The 35 statements on the Soc Questionnaire arranged according to stage are shown in Figure 2.

Stage	#	Statements
Stage 0 Awareness	3	I don't even know what the innovation is
	12	I am not concerned about this innovation.
	21	I am completely occupied with other things.
	23	Although I don't know about this innovation, I am concerned about things in the area.
	30	At this time, I am not interested in learning about this innovation.
Stage 1 Informational	6	I have a very limited knowledge about the innovation.
	14	I would like to discuss the possibility of using the innovation.
	15	I would like to know what resources are available if we decide to adopt this innovation.
	26	I would like to know what the use of the innovation will require in the immediate future.
	35	I would like to know how this innovation is better than what we have now.
Stage 2 Personal	7	I would like to know the effect of reorganization on my professional status.
	13	I would like to know who will make the decisions in the new system.
	17	I would like to know how my teaching or administration is supposed to change.
	28	I would like to have more information on time and energy commitments required by this innovation.
	33	I would like to know how my role will change when I am using the innovation.
Stage 3 Management	4	I am concerned about not having enough time to organize myself each day.
	8	I am concerned about conflict between my interests and my responsibilities.
	16	I am concerned about my inability to manage all the innovation requires.
	25	I am concerned about time spent working with nonacademic problems related to this innovation.
	34	Coordination of tasks and people is taking too much of my time.

Stage 4 Consequence	1	I am concerned about students' attitudes toward this innovation.
	11	I am concerned about how the innovation affects students.
	19	I am concerned about evaluating my impact on students.
	24	I would like to excite my students about their part in this approach.
	32	I would like to use feedback from students to change the program.
Stage 5 Collaboration	5	I would like to help other faculty in their use of the innovation.
	10	I would like to develop working relationships with both our faculty and outside faculty using this innovation.
	18	I would like to familiarize other departments or persons with the progress of this new approach.
	27	I would like to coordinate my effort with others to maximize the innovation's effects.
	29	I would like to know what other faculty are doing in this area.
Stage 6 Refocusing	2	I know of some other approaches that might work better.
	9	I am concerned about revising my use of the innovation.
	20	I would like to revise the innovation's instructional approach.
	22	I would like to modify our use of the innovation based on the experiences of our students.
	31	I would like to determine how to supplement, enhance, or replace the innovation.

Note: Measuring the Stages of Concern About the Innovation: A Manual For Use of the SoC Questionnaire (p. 25) by G. E. Hall, A. A. George, and W. L. Rutherford, 1998, Austin, TX: Southwest Educational Development Laboratory. Copyright 1998 by the Southwest Educational Development Laboratory. Reprinted with permission by the Southwest Educational Developmental Laboratory (Appendix C).

Figure 2

Statements on the Stages of Concern Questionnaire Arranged According to Stage

The questionnaire was administered to school faculty members to establish reliability. During the next two years, the 35-item SoC Questionnaire was used in studies of

11 different educational innovations and numerous validity studies. Many refinements also were made after development of the SoC Questionnaire in order to interpret the data accurately and to make high internal reliability very likely (George, 1977; Hall et al., 1979).

Studies Using the Concerns-Based Adoption Model

The CBAM has been used to study a variety of innovations. However, the CBAM has been used primarily in educational settings with innovations of instruction, classroom configuration, and instructional administration.

The CBAM was utilized by Theriot (1997) to examine the levels of concern of secondary and postsecondary academic faculty, career and technical faculty, counselors, and administrators at the Mississippi pilot sites regarding Tech Prep as an educational innovation. Theriot reported that Tech Prep initiatives in Mississippi had focused for more than four years on secondary schools while postsecondary schools had not received as much attention. The findings indicated that postsecondary personnel had less awareness and less concern about Tech Prep as an educational innovation. Also, secondary personnel were more concerned about the consequences of Tech Prep than postsecondary personnel.

Long (1994) also utilized the CBAM to describe the implementation of Tech Prep programs in Virginia. The programs selected had been in operation for at least two or more years. The subscores on the SoC were placed in order by highest to lowest mean scores for each of the four participating groups. The highest Stage of Concern for administrators, career and technical teachers, and counselors was Stage 5 (Collaboration). Academic teachers highest stage of concern was Stage 4 (Consequence).

Cooper (1996) used the CBAM to determine concerns, knowledge levels, and instruction and training needs of K-8 mathematics teachers with reference to the implementation in 1994 of the Curriculum and Evaluation Standards for Mathematics. The Curriculum and Evaluation Standards for Mathematics were designed by the National Council of Teachers of Mathematics (NCTM) to set standards and to guide reform of school mathematics. The results of the research showed the teachers to be typical nonusers of the NCTM Standards and identified classroom teachers' peak stage was Stage 0 (Awareness).

Summary

National reports indicate that reform is needed in the educational community and one method to achieve reform is through the professionalization of teaching. One way to

professionalize teaching is through the establishment of and adherence to accepted standards for the preparation, licensure, and certification of teachers. The standards proposed for teachers by the NBPTS explain in detail what a teacher should know and be able to do. Since teachers have traditionally been prepared using varying criteria, especially between general educators and career and technical educators, the standards published by the NBPTS represent one method for reforming and changing the preparation of teachers.

Attention must be given to educators who will be responsible for implementing the innovation. Research studies on innovation adoption theory can be helpful to facilitators involved in implementing innovations.

The Stages of Concern About the Innovation model can provide information on the concerns of educators. By understanding these Stages of Concern and determining where the educator’s concerns are in relation to the Stages of Concern, strategies can be implemented to enhance successful adoption of the innovation of National Board Standards for Career and Technical Teachers.

CHAPTER 3

RESEARCH METHOD

The purpose of this chapter is to describe the research methodology used in the study. The chapter includes the purpose of the study, sample population, sample selection, instrumentation, data collection procedures, and analysis of the data.

To accomplish this study, a descriptive research design was utilized. Defined by Gall et al. (1996) as “a type of quantitative research that involves making careful descriptions of educational phenomena” (p. 374), descriptive research uses data to answer questions concerning the state of the sample studied. The primary concern of most descriptive studies is determining “what is.” Gall et al. stated “that some of the most influential calls for reform of the educational system have used findings of descriptive research to make their case” (p. 372).

Purpose of the Study

The purpose of this study was to determine the Stages of Concern of secondary career and technical educators in

the state of Georgia towards Career and Technical Education Standards for National Board Certification.

Sample Population

The population for this study was Georgia secondary career and technical educators employed during the 1999-2000 school year in grades 9-12 in the fields of agriculture education, business education, family and consumer sciences education, health occupations education, marketing education, technology education, and trade and industrial occupations education. As identified by the Georgia Department of Education, the population size was 3,981. This included 383 agriculture education teachers, 1,206 business education teachers, 722 family and consumer sciences education teachers, 172 health occupations education teachers, 118 marketing education teachers, 588 technology education teachers, and 792 trade and industrial occupations education teachers. The 14 participants in the pilot study, discussed later, were eliminated from the available sampling frame. Therefore, the population size was adjusted to 3,967.

Sample Selection

A proportional stratified random sample from the population identified from the Georgia Department of Education was used in order to obtain a sample that was

representative to allow for inferential statistics to be generalized to the entire population (Gall, Borg, & Gall, 1996). A sample that is proportionally stratified is one in which all members of the accessible population had an equal chance of being selected.

Using Krejcie and Morgan's (1970) formula and calculation chart, a required minimum sample of 351 was needed to be representative of the population and strengthen external validity. The sample drawn of 529 was approximately 50% larger than the minimum. Because secondary career and technical teachers in Georgia were classified into seven fields by the Georgia Professional Standards Commission, proportional stratified sampling was used to insure that the proportion of each field in the sample was the same as their proportion in the population (Gall et al., 1996). The following number of teachers in each field was needed: 51 agriculture education teachers, 160 business education teachers, 96 family and consumer sciences education teachers, 23 health occupations education teachers, 16 marketing education teachers, 78 technology education teachers, and 105 trade and industrial occupations education teachers. Due to rounding decimals above .5 up to the next whole number, a total of 529 teachers was identified as members of the sample. The

percentage of teachers in each field in the state of Georgia and in the sample is reported in Table 1.

Table 1

Teaching Field Percentages in Total Possible Population and Sample

Teaching Field	Total Possible		Sample	
	n	%	n	%
Agriculture Education	383	9.6	51	9.6
Business Education	1,206	30.3	160	30.3
Family and Consumer Science Ed	722	18.1	96	18.1
Health Occupations Education	172	4.3	23	4.3
Marketing Education	118	3.0	16	3.0
Technology Education	588	14.8	78	14.8
Trade and Industrial Education	792	19.9	105	19.9
Total	3,981	100.0	529	100.0

Since the sampling frame was large and accessible, Gall et al. (1996) suggested using systematic sampling. Systematic sampling is easier than simple random sampling because using a table of random numbers is not required (Rojewski, 1997). For each teaching field, the field's population was divided by the number needed for the sample. Next, a number smaller than the number attained by the division was randomly selected. Then using this number x, every xth name was selected from the list of career and technical teachers provided by the Georgia Department of

Education until the required number of teachers had been attained (Gall et al., 1996)

Instrumentation

The Concerns-Based Adoption Model (CBAM) is based on research findings from studies conducted by the University of Texas Research and Development Center during the late 1970s and early 1980s about educational dissemination and change (Hall & George, 1979). The model is premised on the assumption that change is an ongoing, personal experience and was developed for describing the concerns that professionals may have about an innovation (Bailey & Palsha, 1992).

The Stages of Concern About the Innovation is one dimension of the CBAM that is grounded in conceptual literature and field experience which attempt to describe the personal aspects of change (Hall & George, 1979). The Stages of Concern About the Innovation explores the concerns participants have about an innovation from the first time they become cognizant of it until they have mastered it.

The Stages of Concern Questionnaire about the Innovation (SoC), based on the Concerns-Based Adoption Model (Hall & George, 1979), was selected to identify the concerns of secondary career and technical teachers toward

Career and Technical Standards for National Board Certification. Many studies regarding educational innovations have used the SoC with favorable results (Aneke & Finch, 1997; Cooper, 1996; Long, 1994; Theriot, 1997).

Stages of Concern

The SoC is a 35-item questionnaire using a Likert-type scale with responses ranging from zero (irrelevant) to seven (very true). Each of the seven Stages of Concern (see Figure 1, Chapter 2) is represented by five items included on the questionnaire (Figure 2, Chapter 2). An individual's Likert responses are totaled for these five questions. The range for each of the seven scales is 0-35.

Permission to use and reprint the SoC (Appendix B) was granted from the Office of Institutional Communications and Policy Services, Southwest Educational Development Laboratory.

Reliability

According to Gall et al. (1996), the reliability of an educational measurement is defined as "how much measurement error is present in the scores yielded by the test. (Note in this definition that reliability is a property of a test's scores, not of the test itself.)"(p. 254). One widely accepted method of estimating reliability involves the computation of a reliability coefficient which varies

between scores of .00 (no reliability) and 1.00 (perfect reliability).

The items on the Stages of Concern survey were selected carefully so that:

> high internal reliability was very likely. One of the necessary conditions for an item to be included was that responses to it correlate more highly with responses to other items measuring the same stage than with responses to items on other scales. As a result, high internal reliability was assured. (Hall et al., 1998, p. 10)

In 1974, the reliability of the questionnaire was determined using a two-week, test-retest study. The test-retest correlations ranged from .65 to .86 for the seven stages and the internal reliability ranged from .64 to .83 (Hall & George, 1979).

Validity

Validity is defined by the American Educational Research Association, American Psychological Association, and National Council on Measurement in Education (1985) as the “appropriateness, meaningfulness, and usefulness of the specific inferences made from test scores” (p. 8). Gall et al. (1996) also describe validity as the degree that a test measures what it claims to measure.

Hall and George (1979) confirmed that a series of validity studies indicated that the SoC questionnaire measured the seven stages of concern as identified and conceptualized during longitudinal studies. Hall et al. (1998) utilized investigations that involved "intercorrelation matrices, judgments of concerns based on interview data, and confirmation of expected group differences and changes over time" (p. 12) to insure the validity of the SoC questionnaire. A series of validity studies utilizing educational innovations, such as team teaching and instructions methods, were conducted, all of which provided evidence "that the SoC questionnaire measures all the hypothesized Stages of Concern" (Hall et al., 1998, p. 20).

Pilot Study

A pilot study was performed to determine if prospective participants understood the directions in the cover letter and had the necessary information to complete the SoC questionnaire and demographic questions. A convenience sample (Gall et al., 1996) was chosen for the study for three reasons: (a) the sample was suited for the study because it contained members of all seven career and technical teaching fields, (b) a list of all members was available from Gwinnett County Schools, Georgia, and made

available to the researcher because the researcher was currently employed by Gwinnett County Schools, and (c) the pilot study needed to be completed in a very short time span due to the public school calendar.

Fourteen secondary Georgia career and technical education teachers, two from each of the seven career and technical areas, were drawn from the population. The teachers were sent a survey package that consisted of a cover letter (Appendix D), the Stages of Concern Questionnaire with demographic questions (Appendix E), an instrument feedback form (Appendix F), and a return envelope.

Seven of the teachers in the sample, one from each area, also were sent an overview of the Career and Technical Education Standards (formerly Vocational) for National Board Certification (Appendix G). The other seven teachers in the sample did not receive the overview. The cover letter directed the teachers not to complete the Stages of Concern questionnaire.

Teachers were asked if, with the information provided, they were able to determine what standards were being measured. Of the 14 pilot survey packages sent to the sample, a total of 12 were returned. Five of the returned pilot surveys were from teachers who received the overview

and all seven were returned from teachers who did not receive the overview.

Of the five teachers who received the overview and returned their pilot surveys, all reported that with the information provided they were able to identify the standards being measured. In contrast, only one out of seven teachers who did not receive the overview reported that they were able to determine what standards were being measured. Therefore, it was concluded that information about the standards being measured was needed by the participants in order to complete the questionnaire.

Collection of Data

Based on the results of the pilot study, the overview of the Career and Technical Education Standards for National Board Certification (Appendix G) was included in the survey packet. Other documents mailed to members of the sample included: a cover letter with a guarantee of confidentiality (Appendix H), directions for completing the SoC questionnaire (Appendix I), the SoC questionnaire with demographic questions included (Appendix E), and a self-addressed stamped envelope.

Each questionnaire was color coded to improve tracking of respondents and identify career and technical teaching field: agriculture education was light green, business

education was purple, family and consumer sciences education was pink, health occupations education was salmon, marketing education was light blue, technology education was yellow, and trade and industrial occupations education was goldenrod. Also, the questionnaires were numbered starting with one in the lower right corner of the first page to track non-respondents.

A follow-up post card (Appendix J) was sent to the 398 participants who had not returned the questionnaire within two weeks in order to increase the return rate. During the two weeks after the follow-up post cards were sent, an additional 30 questionnaires were returned. A second follow-up mailing was not feasible because the school year ended and the only contact address for the sample was the school's address.

Twenty-nine questionnaires were returned by the post office because of incorrect addresses, incorrect names, and incorrect teaching field information in the list of secondary career and technical teachers provided by the Georgia State Department of Education. This reduced the sample to 500. The 130 usable questionnaires provided for a response rate of 26% (130/500).

Response Rate

An adequate response rate is essential for any meaningful interpretation (Gall et al., 1996). Initially, a 40% to 50% response rate was expected. However, a response rate of only 26% was achieved. Recent literature suggests that the response rate in research surveys is declining, and the typical response rate for mail surveys is now approximately 20% (Colombo, 2000). One possible reason for the decline in response rates is the overall increase in unsolicited or junk mail. Colombo (2000) stated that “it is therefore not surprising that legitimate survey research finds it difficult to penetrate this clutter” (p. 85).

A total of 529 questionnaires was mailed to a proportional systematic random sample. Total questionnaires returned were 159 of 529 for a response rate of 30%. But, 29 were returned either by the post office for insufficient addresses or by the teachers themselves. These teachers indicated that they were no longer in the career and technical education field. This reduced the response to 130 out of 500 for a response rate of 26%. The percentage of respondents in each teaching field closely approximated their percentage in the total teaching population in Georgia (Table 2).

Table 2

Comparison of Survey Respondents to Total Teaching Population in Georgia

	Sample		Population	
	n	%	n	%
Agriculture Education	8	6.2	383	9.6
Business Education	38	29.2	1,206	30.3
Family and Consumer Sciences	33	25.4	722	18.1
Health Occupations	5	3.8	172	4.3
Marketing Education	7	5.4	118	3.0
Technology Education	20	15.4	588	14.8
Trade and Industrial Education	19	14.6	792	19.9
Total	130	100.0	3,981	100.0

Nonresponse Bias

Nonresponse bias is caused when respondents in a survey answered differently than nonrespondents would have had they responded (Sarvela & McDermott, 1993). To insure that nonresponse bias had not affected the data, a follow-up study of nonrespondents was performed. A convenience sample (Borg et al., 1996) of seven Atlanta area nonrespondents was chosen for the study for three reasons: (a) the list from the DOE did not include school phone

numbers and I had access to the Atlanta area telephone directory with school phone numbers listed, (b) the list from the DOE did not include home phone numbers or home addresses for the teachers, and (c) requesting teachers to return long distance phone calls was considered unrealistic. One nonrespondent from each of the seven career and technical education teaching fields was contacted by telephone and asked verbally to respond to all of the questions on the Stages of Concern Questionnaire.

The peak Stage of Concern for the nonrespondents was Stage 0 (Awareness), the same as for the full study (see Chapter 4).

Sampling Error

Like most decisions related to research design, there is seldom a definitive answer to how large a sample should be. Several aspects of the sampling process must be followed to provide an adequate sample and protect the quality of the data:

1. The sample frame must not exclude people whom you want to describe.

2. The sampling process must be random, giving each member of the population an equal and known probability of selection.

3. The size and design of a random sample, together with the distribution of the data collected, determine the sampling errors. Those sampling errors are the chance variations that occur when collecting data from only a sample of a population (Fowler, 1993).

Even with good designs a researcher needs to consider all sources of error—including sample frame, nonresponse, and nonresponse errors—when evaluating the precision of survey estimates. Nonresponse issues were discussed above. The percentages of responses from each teaching field were presented in Table 2.

The means and standard deviations of the raw scores derived from each of the seven stages of concern were used to calculate the epsilon values (the specified amount that the sample mean varies from the population mean) with a sample size of 130. Table 3 presents the results of these calculations. These values represent the confidence interval around each sample mean with 95% confidence. No margin of error is greater than 1.39, nor is the percent error greater than 4. Therefore, the epsilon value is within an acceptable range.

In this study, the sample did not exclude anyone that was to be described and the sampling process was random. In addition, the margin of error was determined to be

acceptable. Therefore, the small sample size does not seem to be a negative factor in the study.

Table 3

Margin of Error

Stage	M	SD	E	% Error
0	16.13	6.61	+/- 1.14	+/- 3.26
1	24.59	5.61	+/- 0.96	+/- 2.74
2	26.25	7.29	+/- 1.25	+/- 3.57
3	19.63	7.61	+/- 1.31	+/- 3.74
4	21.79	7.04	+/- 1.21	+/- 3.45
5	20.59	8.06	+/- 1.39	+/- 3.97
6	16.29	7.03	+/- 1.21	+/- 3.45

Protection of Human Subjects

Permission to conduct the study and use the questionnaire was granted from the Human Subject Office, Office of the Vice-President for Research at the University of Georgia (Appendix K). Since the questionnaire was confidential, names of the participants were not requested. However, all of the questionnaires were coded to identify participants who did not respond and for follow-up purposes.

Analysis of the Data

The SoC questionnaire (the dependent variable shown in Appendix E) consisted of 35 statements expressing a level of concern about an innovation. Marking a Likert-type scale

of zero to seven indicated the degree to which each concern was true to each respondent. A score of 0 indicated little or no concern, low numbers indicated low concerns, and high numbers up to 7 indicated high concern (George, 1977). Scores had a possible range of 0-35 for each of the seven Stages of Concern.

After the scores were summed for each stage, the raw score was converted into a percentile score. The percentile scores of each stage for each individual were compared to determine the individual's highest Stage of Concern.

High score interpretation was directly based on the Stages of Concern About the Innovation definitions (see figure 1, chapter 2). Hall et al. (1998) stated that

> Stage scores are directly related to the stage definitions with the relative intensity of concern being indicated by the percentile score. The higher the score, the more intense the concerns at that stage. The lower the score, the less intense the concerns at that stage. Higher and lower are not absolute, however, but relative to the other stage scores for that individual. Thus, a 51st percentile for one person may represent her/his highest score and, therefore, her/his most intense Stage of Concern, while a 51st percentile stage score for another person

> may represent her/his lowest stage score—a stage where there is not a great deal of concern. (p. 31)

The highest Stage of Concern was identified as the peak Stage of Concern. If a respondent had a tie for peak stage, the more advanced stage became the peak stage.

Teaching Field

An independent variable for analysis was teaching field. Seven teaching fields were included on the SoC questionnaire: (a) agriculture education, (b) business education, (c) family and consumer sciences education, (d) health occupations education, (e) marketing education, (f) technology education, (g) and trade and industrial occupations education.

Years of Teaching Experience

A second independent variable for analysis was years of teaching experience in current vocational field. Since the National Board requires that a teacher have a minimum of three years of teaching experience to be eligible for National Board Certification in Career and Technical Education (2000), respondents were divided into two categories based on years of experience: (a) two or less years of experience and (b) three or more years of experience

Educational Degree

A third independent variable for analysis was highest educational degree currently held. The seven possible degrees a respondent held were: (a) high school diploma; (b) post-secondary technical school diploma, (c) two-year associate degree, (d) bachelor's degree, (e) master's degree, (f) specialist's degree, and (g) doctoral degree.

The National Board for Professional Teaching Standards requires that a teacher must hold a minimum of a bachelor's degree to be eligible for National Board Certification. Because of this requirement, analysis was done comparing the peak Stages of Concern of respondents with varying educational degrees.

Three comparisons were completed to determine if a respondent's educational degree affected his or her peak Stage of Concern: (a) respondents with less than a bachelor's degree (do not meet education requirement set by the NBPTS and therefore are ineligible for National Board certification) compared with respondents with a bachelor's degree or higher (do meet education requirement set by the NBPTS and therefore eligible for National Board certification); (b) respondents compared across each of the highest educational degree held; and (c) respondents with a

bachelor's degree compared with respondents with a graduate degree.

The Statistical Package for the Social Sciences Version 9 (SPSS) was used to analyze the data.

Research Question One

What is the summary group profile of secondary career and technical education teachers in Georgia toward the Career and Technical Education Standards for National Board Certification as measured by the Stages of Concern Questionnaire?

A summary profile using mean percentile scores was developed for the entire study sample. This profile highlights the peak Stage of Concern of the group.

Research Question Two

Is the Georgia secondary career and technical teacher's peak Stage of Concern toward the Career and Technical Education Standards for National Board Certification as measured by the Stages of Concern Questionnaire dependent on the teacher's (a) career and technical teaching field, (b) years of teaching experience and, (c) highest educational degree held?

The peak Stage of Concern for each respondent is the dependent variable. For each independent variable, a chi-

square analysis was conducted to determine if the peak Stage of Concern is dependent on a certain level of the independent variable.

Summary

The research design and plan for data analysis were outlined in this chapter. The population and sampling procedures for a mail survey were described. Response rate and nonresponse bias were discussed. The method to determine the peak Stage of Concern from the Stages of Concern questionnaire was explained, and the analysis for each research question was described. Results of the analysis for two research questions are reported in Chapter 4.

CHAPTER 4

RESULTS

The purpose of this study was to determine the Stages of Concern of secondary career and technical educators in the state of Georgia toward career and technical standards introduced by the National Board for Professional Teaching Standards. Knowledge of the Stages of Concern toward this educational innovation, Career and Technical Education Standards for National Board Certification, were measured by the Stages of Concern Questionnaire (Hall, George, & Rutherford, 1998).

Description of the Sample

Each respondent provided information regarding number of years of teaching experience and highest educational degree attained (Table 4). The majority of teachers (89%) had three or more years of teaching experience (Appendix L). More than one-half (57%) of the teachers' highest degree attained was above the bachelor's level (Appendix M).

The percentage of respondents' highest degree earned and years of teaching experience also closely approximated their percentage in the overall U. S. teaching population,

the U. S. vocational education teaching population, and the state of Georgia teaching population. Appendix N provides the comparison of this study's sample to U.S. and Georgia teachers by degree and years of teaching experience.

Table 4

Description of Sample

	n	%
Teaching Field		
Agriculture Education	8	6.2
Business Education	38	29.2
Family and Consumer Sciences	33	25.4
Health Occupations	5	3.8
Marketing Education	7	5.4
Technology Education	20	15.4
Trade and Industrial Education	19	14.6
Teaching Experience (0-41 years)		
<3	14	10.8
3 or more	116	89.2
Highest Degree Earned		
High School Diploma	0	0.0
Technical Degree	0	0.0
Two Year Associate Degree	6	4.6
Bachelor's Degree	50	38.5
Master's Degree	52	40.0
Specialist's Degree	19	14.6
Doctoral Degree	3	2.3

Reliability of the Instrument

Cronbach's alpha was calculated for the seven Stages of Concern and the total instrument. The values are reported in Table 5. A majority of the scales have values within the acceptable range (.73-.90). Two, however, failed to produce adequate reliabilities (Awareness and Information).

Table 5

Reliability of the Stages of Concern Questionnaire

Stage of Concern		Number of Items	Cronbach's Alpha Coefficient
0	Awareness	5	.57
1	Informational	5	.56
2	Personal	5	.84
3	Management	5	.77
4	Consequence	5	.73
5	Collaboration	5	.87
6	Refocusing	5	.76
-	Overall	35	.90

Hall et al. (1998) reported in the technical manual for measuring the Stages of Concern that they received similar Cronbach values with a group of teachers that fit the same description of this study's respondents. Even

though the teachers' Cronbach values were low for Stage 0 (Awareness) and Stage 1 (Information), follow-up interviews of the respondents provided a significant degree of correspondence between results of the SoC questionnaire and the interviews. In addition, Hall et al. (1998) reported that previous studies with the majority of respondents having high Stage 0 (Awareness) concerns also reported low alpha coefficients.

Hall et al. (1998) suggested that respondents with a peak Stage of Concern score of Awareness (0) can be classified as nonusers. Nonusers' lack of concern toward the innovation could possibly result in low reliability estimates for some of the scales.

Analysis of Research Questions

Respondents to the questionnaire were asked to complete the SoC questionnaire (see Appendix E). The SoC questionnaire consisted of 35 statements expressing a level of concern about an innovation. Marking a 0-7 Likert-type scale indicated the degree to which each concern was true to each respondent. A score of zero indicated little or no concern, low numbers indicated low concerns, and high numbers up to seven indicated high concern (George, 1977). Scores had a possible range of 0-35 for each of the seven Stages of Concern.

After the score was summed for each stage, the raw score was converted into a percentile score. The percentile scores at each stage were compared to determine the highest Stage of Concern for each individual. The highest Stage of Concern was identified as the peak Stage of Concern. If a respondent had a tie for peak stage, the more advanced stage became the peak stage.

Research Question One

What is the summary group profile of secondary career and technical education teachers in Georgia toward the Career and Technical Education Standards for National Board Certification as measured by the Stages of Concern Questionnaire?

The group's peak Stage of Concern was for the Awareness Stage (Stage 0). A high Stage 0 score indicates that the respondents have little concern or involvement with the innovation (Hall et al., 1998). Two scores tied for the second highest peak stage of concern. The Informational Stage (Stage 1) was the higher of the two tied scores with a percentile score of 84.62. A high Stage 1 score suggests that the respondents are interested in having more general information about the innovation and what it will do (Hall et al., 1997). The Personal Stage (Stage 2) had only a .61 lower percentile score (84.01)

than Stage 1. A high Stage 2 score indicated that respondents were uncertain about the demands of the innovation, ability to meet demands of the innovation, and his or her role with the innovation. Figure 3 shows the summary group profile in graphic format.

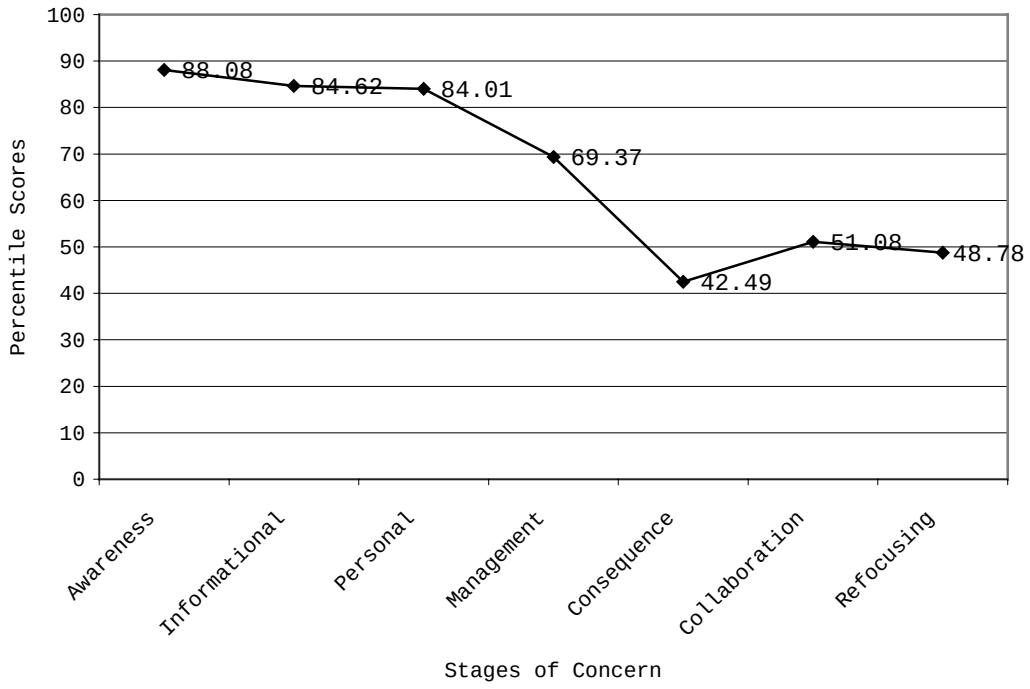

Figure 3. Summary group profile of Georgia secondary career and technical teachers.

The frequency and percentage of respondents' highest Stage of Concern are reported in Table 6. As was illustrated in Figure 3, the largest number of respondents fell into Stage 0 (Awareness).

Table 6.

Percentage of Sample in Each Stage of Concern

	Stage	n	%
0	Awareness	60	46.2
1	Informational	18	13.8
2	Personal	36	27.7
3	Management	10	7.7
4	Consequence	0	0.0
5	Collaboration	4	3.1
6	Refocusing	2	1.5

Research Question Two

Is the Georgia secondary career and technical teacher's peak Stage of Concern toward the Career and Technical Education Standards for National Board Certification as measured by the Stages of Concern Questionnaire dependent on the teacher's (a) career and technical teaching field, (b) years of teaching experience and, (c) highest educational degree held?

Career and Technical Education Teaching Field

The first part of research question two focused on whether a difference existed in the SoC peak scores of Georgia secondary career and technical teachers based on

teaching field. The percentage of respondents at each peak Stage of Concern at each experience level is reported in Table 7.

More than three-fourths of the cells in this cross tabulation have an expected frequency of less than five; therefore, any interpretation of a chi-square analysis is inappropriate. A visual examination holds that for most of the fields there is not a major difference in the peak Stage of Concern of Career and Technical Education teachers based upon teaching field. However, a larger than expected percentage of health occupations teachers are at the Information Stage than the total group. Also, marketing teachers are more likely than the group to have a peak Stage 2 (Personal) score. Trade and Industrial teachers are more likely to have a peak Stage 0 (Awareness) score than the total.

Years of Teaching Experience

The second part of research question two focused on whether a difference existed in the SoC peak scores of Georgia secondary career and technical teachers with three or more years of teaching experience and Georgia secondary career and technical teachers with less than three years of

Table 7

Peak Stage of Concern by Career and Technical Education Teaching Field

	Career and Technical Education Teaching Field															
	Agriculture Education		Business Education		Family and Consumer Science Education		Health Occupations Education		Marketing Education		Technology Education		Trade and Industrial Education		Total	
Peak Stage of Concern	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
0 Awareness	4	50.0	19	50.0	14	42.4	1	20.0	2	28.6	9	45.0	11	57.9	60	46.2
1 Informational	0	0.0	4	10.5	7	21.2	2	40.0	2	28.6	2	10.0	1	5.3	18	13.8
2 Personal	2	25.0	14	36.8	6	18.2	1	20.0	3	42.9	5	25.0	5	26.3	36	27.7
3 Management	2	25.0	1	2.6	4	12.1	1	20.0	0	0.0	1	5.0	1	5.3	10	7.7
4 Consequence	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5 Collaboration	0	0.0	0	0.0	1	3.0	0	0.0	0	0.0	2	10.0	1	5.3	4	3.1
6 Refocusing	0	0.0	0	0.0	1	3.0	0	0.0	0	0.0	1	5.0	0	0.0	2	1.5
Total	8	6.2	38	29.2	33	25.4	5	3.8	7	5.4	20	15.4	19	14.6	130	100.0

teaching experience. The percentage of respondents at each peak Stage of Concern at each experience level is reported in Table 8.

There were 58% of the cells of the chi-square analysis with expected frequency less than 5. As a result, no interpretation of the chi-square analysis could be made.

A visual examination of the data, though, suggests that there is little variation in the percentage of experienced and less experienced respondents at the Awareness (0) stage. There is a slight difference (0-15%) for Stage 1 (Informational). Those with more experience are more likely to be at this Stage of Concern. More respondents are at the Personal Stage (2) than at Stage 1, but there is not a major difference in the percentage of the two groups at this stage. The more advanced stages had only 10% of the study sample and merit no discussion.

Highest Educational Degree

The last part of research question two focused on whether a difference existed in the SoC peak scores of Georgia secondary career and technical teachers with a two-year associate degree, bachelor’s degree, master’s degree, specialist’s degree, or doctoral degree.

Table 8

Peak Stage of Concern by Years of Teaching Experience

	Peak Stage of Concern	Experience Level in Years					
		0-2		3 or more		Total	
		n	%	n	%	n	%
0	Awareness	7	50.0	53	45.7	60	46.2
1	Informational	0	0.0	18	15.5	18	13.8
2	Personal	5	35.7	31	26.7	36	27.7
3	Management	2	14.3	8	6.9	10	7.7
4	Consequence	0	0	0	0	0	0
5	Collaboration	0	0	4	3.4	4	3.1
6	Refocusing	0	0	2	1.7	2	1.5
Total		14	10.8	116	89.2	130	100%

The first presentation of the data is teachers with less than a bachelor’s degree compared to teachers with a bachelor’s degree or graduate degree. Table 9 has this breakout. Two-thirds of the cells had an expected frequency of <5. Therefore, any interpretation of a chi-square analysis is inappropriate.

A visual examination of the table shows that there are few differences in percentages across the cells. However, although only six respondents have less than a bachelor’s

degree, 50% of them are at the Personal (Stage 2) Stage of Concern.

Table 9

Peak Stage of Concern of Teachers With Less Than a Bachelor's Degree Compared to Teachers with a Bachelor's/ Graduate Degree

		Highest Educational Degree					
	Peak Stage of Concern	Below Bachelor		Bachelor and Graduate		Total	
		n	%	n	%	n	%
0	Awareness	2	33.3	58	46.8	60	46.2
1	Informational	0	0.0	18	14.5	18	13.8
2	Personal	3	50.0	33	26.6	36	27.7
3	Management	1	16.7	9	7.3	10	7.7
4	Consequence	0	0.0	0	0.0	0	0.0
5	Collaboration	0	0.0	4	3.2	4	3.1
6	Refocusing	0	0.0	2	1.6	2	1.5
Total		6	4.6	124	95.4	130	100.0

The second analysis of this independent variable is by highest educational degree currently held. Table 10 has this breakout. Almost three-fourths of the cells have an expected frequency less than five. As a result, no interpretation of the chi-square analysis could be made.

A visual examination of the data shows that 79% of the respondents have either a bachelor's or a master's degree—their percentages at each peak Stage of Concern mirror each other and the total. The largest peak Stage of Concern is Awareness (0), followed by Personal (2) and Informational (1). As noted in Table 9, respondents with less than a bachelor's degree are more likely to be at the Personal (2) Stage. The majority of respondents with a doctorate (n=2) are at the Awareness (0) Stage, with their bachelor, specialist, and masters counterparts.

The third presentation of the data is respondents with a bachelor's degree compared to respondents with a graduate (i.e. master's, specialist, or doctoral) degree. The results are shown in Table 11. Forty percent of the cells have an expected frequency less than five. Therefore, no interpretation of the chi-square analysis could be made. However, a visual examination of the data shows that there are few differences between the two groups.

Summary

The peak Stage of Concern for Georgia secondary career and technical teachers was Stage 0 (Awareness). The majority of the cells in each chi-square test yielded an expected frequency less than five. As a result, no interpretation of the chi-square analysis could be made.

Table 10

Peak Stage of Concern by Highest Educational Degree Currently Held

		Highest Educational Degree Currently Held											
	Peak Stage of Concern	Associate Degree		Bachelor's Degree		Master's Degree		Specialist's Degree		Doctoral Degree		Total	
		n	%	n	%	n	%	n	%	n	%	n	%
0	Awareness	2	33.3	24	48.0	25	48.1	7	36.8	2	66.7	60	46.2
1	Informational	0	0.0	6	12.0	9	17.3	3	15.8	0	0.0	18	13.8
2	Personal	3	50.0	14	28.0	13	25.0	5	26.3	1	33.3	36	27.7
3	Management	1	16.7	3	6.0	4	7.7	2	10.5	0	0.0	10	7.7
4	Consequence	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
5	Collaboration	0	0.0	2	4.0	1	1.9	1	5.3	0	0.0	4	3.1
6	Refocusing	0	0.0	1	2.0	0	0.0	1	5.3	0	0.0	2	1.5
Total		6	4.6	50	38.5	52	40.0	19	14.6	3	2.3	130	100.0

Table 11

Peak Stage of Concern of Teachers with a Bachelor's Degree Compared to Teachers With a Graduate Degree

		Degree					
	Peak Stage of Concern	Bachelor		Graduate		Total	
		n	%	N	%	n	%
0	Awareness	24	48.0	34	45.9	58	46.8
1	Informational	6	12.0	12	16.2	18	14.5
2	Personal	14	28.0	19	25.7	33	26.6
3	Management	3	6.0	6	8.1	9	7.3
4	Consequence	0	0.0	0	0.0	0	0.0
5	Collaboration	2	4.0	2	2.7	4	3.2
6	Refocusing	1	2.0	1	1.4	2	1.6
Total		50	40.3	74	59.7	124	100.0

However, after visual examination of the data, there seemed to be no major differences between Georgia secondary career and technical teacher's peak Stage of Concern based on career and technical teaching field, years of teaching experience, or highest educational degree held.

CHAPTER 5

DISCUSSION

Introduction

The purpose of this study was to determine the stages of concern, as measured by their responses on the Stages of Concern questionnaire, of Georgia secondary career and technical educators toward career and technical standards introduced by the National Board for Professional Teaching Standards (NBPTS, 1997). Within the context of educational reform, this purpose comprises three components: (a) preparation of secondary career and technical teachers, (b) post-preparation standards for those teachers, and (c) stages of concern with an innovation in education. In this chapter, educational reform that warrants the discussion of the three components of the purpose of this study is presented in terms of the findings of the study.

Educational Reform

A Nation At Risk, when presented in 1983, caused a hubbub in education that has lasted almost 20 years. The ramifications have been threefold: (a) student achievement, (b) teacher preparation, and (c) staff development. Each of these has been dealt with by a number of organizations and

levels of government in an attempt to standardize what occurs in a classroom to, in theory at least, “level the playing field” for all students to, again in theory, raise the level of achievement of all students.

Student Achievement

This attempt at standardization has resulted, for the most part, in numerous tests administered to students to “measure” their achievement at, typically, 4th, 8th, and 11th grades. Standardized testing, for better or for worse, is one aspect of educational reform that has remained in the forefront of controversy, as it takes a great deal of time away from direct instruction and frequently imposes the topics of instruction in a limited way. In the present study, student achievement is a component of the debate about increased standards in teacher certification because of the argument by Lynch (1996), for example, that a teacher’s performance predicts student performance.

Teacher Preparation

A teacher’s performance usually results from a teacher’s preparation and subsequent teaching environment. Licensure for teachers is normally administered at the state level and consists of preparation through coursework, field experience, and student teaching. Often, national standardized testing is required. When teachers are in

demand because of a lack of licensed teachers, as they are at present, districts are forced to hire individuals who lack specific preparation, and the state issues emergency or provisional licensure. The term “license” as opposed to “certification” is used in this discussion to avoid confusion with Board Certification, the topic of the present study.

The Holmes Group (1986) has made recommendations to colleges/schools of education for designing their teacher preparation programs, and many have responded by redesigning their programs. One difficulty is that, whatever the program curriculum, it must include the requirements of the state in which the college operates. In addition, the financial reward for teaching in a time of very low unemployment is relatively minimal, so the motivation for college-age students to become teachers is also decreased. Moreover, the number of requirements for entry into the profession continues to increase and includes coursework, testing, unpaid field experience, and unpaid student teaching.

Efforts to improve teacher preparation and, simultaneously, student achievement have focused on the professionalization of the teaching profession (Clifford & Guthrie, 1988; Wise & Leinbbrand, 1996). Professions share

similar characteristics: (a) a common knowledge base, (b) rigorous training to acquire the knowledge and skills necessary for professional practice, and (c) high standards for entry into the profession (Shanker, 1996). Typically, college and university teacher preparation programs provide a common knowledge base in education—(a) knowledge of the child through courses in psychology, (b) understanding of the field of education through foundations and history of education courses, and (c) methods courses for learning the practical “how-to” aspects of classroom functions. These programs also provide rigorous training, requiring field experiences and student-teaching as long as one year. Specific coursework, good grades, passing scores on standardized tests, and successful field and student teaching experiences comprise the high standards for entry into the teaching profession. Some states require a master’s degree for licensure. The overwhelming majority of participants in the present study all had at least a bachelor’s degree (95.4%), and more than half (56.9%) had education beyond the bachelor’s degree.

Staff Development

Staff development, the continuing training of teachers while they retain positions in the field, pertains to the issue of quality control (Corrigan & Haberman, 1996) in the

teaching profession, the subject of the present study. Such training or re-training of teachers normally consists of workshops, seminars, and coursework suggested frequently by an administrator based on the needs of the district, and many teachers from that district may receive the training at the same time. The primary difference is that the motivation for continuing education in the context of the field of education differs from that in other professions. In medicine, law, or accountancy, for example, additional education is determined by the needs of the professional to do his or her job better. The professional decides. In addition, success, defined by an increase in income, often accompanies the additional training.

Standards for the preparation, licensure, and certification of all teachers have been developed (Darling-Hammond, 2000). Board Certification goes beyond entry into the profession and makes additional demands on, theoretically, the successful professional. Staff development, defined in the present study as Board Certification, currently lacks a monetary reward in many districts. Further, it costs money for teachers to pursue it--a difficulty for many already poorly paid teachers. If teachers are successfully teaching in the classroom, are not as well-paid as most professionals, and would have to

spend their own money to add Board Certification for which a reward is either not present or in doubt, why should they pursue it?

Innovation in Education

Teachers with many years of experience will say, “What goes around, comes around” in discussions of innovation in education. In a typical 30+-year career in secondary education, for example, a teacher has seen open classrooms, core curriculum, electives, tighter discipline, looser discipline, departmentalization, cooperative teaching, cooperative learning, and so on. Elementary teachers have seen cursive writing, whole language, ITA (Initial Teaching Alphabet), varied science programs, old and new math, and so on. The real stable force in the school is the teacher.

The field of career and technical education differs somewhat in that the content must always be as current as possible. For example, one would not teach automobile mechanics using an Edsel or typing on a manual typewriter. As a result of this evolving curriculum content, teachers in vocational fields must be more responsive than others to innovation.

Stages of Concern

The Stages of Concern questionnaire (Hall & George, 1979) used in the present study assumes that concerns

progress in a series of stages from awareness through mastery (acceptance and understanding). It is founded on two basic premises: (a) Change happens and (b) Professionals are concerned about (resistant to) change (Bailey & Palsha, 1992). The innovation in question is the Career and Technical Education Standards for National Board Certification (NBPTS, 1997). To become Board Certified, a career and technical education teacher must fulfill a number of requirements including meeting 13 standards which are evaluated by NBPTS.

In the present study, the career and technical teachers surveyed fell in the first three stages of concern—(a) Awareness (46.2%), (b) Informational (13.8%), and (c) Personal (27.7%). By peaking in the Awareness stage, they indicated greater agreement with the following statements:

1. I don’t even know what the innovation is.
2. I am not concerned about this innovation.
3. I am completely occupied with other things.
4. Although I don’t know about this innovation, I am concerned about things in the area.
5. At this time, I am not interested in learning about this innovation.

In the absence of an item analysis, the teachers appear to be saying that they do not know about the certification, and they really have other things to do. While they may have some interest in the area of Board Certification generally, they don’t know enough about it. They are classified as non-users.

The second (Informational) and the third (Personal) stages, where fewer teachers peaked, respectively, the concerns are, basically, “I need to know more to make a judgment” and “I want to know how this will affect how I do my job and what constraints will be made on my job, my income, and my time.” The group in the Awareness stage lacks information, and the subsequent two groups want to know more about how Board Certification will change their lives and their teaching.

The reliability of the SoC for Stage 0 and Stage 1 was low- .57 and .56 respectively. Generally, tests that yield Cronbach’s Alpha Coefficients with a reliability of .80 or higher are considered sufficiently reliable (Borg et al., 1996).

Since the majority of the career and technical teachers fell in Stage 0, the strength of the results could be questioned. Hall et al. (1998) report that low reliability scores for Stage 0 and Stage 1 are common.

Numerous follow-up interviews performed by Hall provided evidence that the results of the SoC were accurate despite low Cronbach's Alpha scores. Hall et al., (1998) also suggest that respondents with a peak Stage of Concern score of Awareness (0) can be classifed as non-users and their lack of concern could possibly result in low reliability estimates for Stage 0. Therefore, the low reliability results do not seem to have negatively impacted the results of this study.

The results of this study are also supported by the relationship between a person's concerns about an innovation and time. Hall et al. (1998) report in the technical manual that a person's concerns about an innovation develop toward the later stages with time. When the study was done in spring of 2000, the Career and Technical Education Standards for National Board Certification had been finalized and evaluation methods had been published for only a few months. Since the career and technical education teachers had very little time in which to be exposed to the Board Standards for Career and Technical Education, their low level of concern could be expected.

Previous studies of levels of concern about Tech Prep as a curriculum innovation in vocational education at the

secondary level indicated concern about consequences and collaboration, stages 4 and 5, respectively (Long, 1994; Theriot, 1997). The primary difference between those and the present study is that Board Certification is not a curriculum innovation; it is a professional innovation primarily affecting the teacher with, perhaps, some eventual impact on the students. On the other hand, concerns among elementary mathematics teachers about a curricular innovation, the Curriculum and Evaluation Standards for Mathematics developed by the National Council of Teachers of Mathematics (NCTM), were similar to those of the present study (Cooper, 1996). In that case, teachers were non-users of the standards, most likely lacking the information necessary to pass judgment on or express concern about the innovation.

Level of concern regarding Board Certification is not related to years of teaching experience or level of education, although some differentiation appears by curriculum area. In terms of years of teaching experience, the number of years was divided between 0-2 (10.8% of the teachers) and 3 or more (89.2% of the teachers). The reason for this choice of experience categories is that Board Certification requires a minimum of three years of teaching experience. States or school districts that offer tenure,

however, normally award it after three years of teaching, and perhaps that would have been a more appropriate benchmark. In either case, no major difference was evident between the two groups in stage of concern. In terms of level of education, no difference was evident in peak stage of concern about Board Certification, although a bachelor's degree is a minimum requirement.

Finally, some difference in level of concern was evident among teachers in Health Occupations Education and Marketing Education. These teachers peaked at the Informational (Stage 1) and the Personal (Stage 2) levels, respectively. This finding may result from the smaller numbers in these two groups—only 3.8% and 5.4% of the total number of teachers, respectively; however, the next smallest group, Agriculture Education (6.2% of teachers), peaked similarly to the other groups—Business Education (29.2% of teachers), Family and Consumer Science Education (25.4%), Technology Education (15.4%), and Trade and Industrial Education (14.6%). The largest group, Business Education, peaked primarily at Stage 0 – Awareness (50.0%) and Stage 2 – Personal (36.8%). This was similar to the groups other than Health Occupations and Education and Marketing Education.

Conclusion

These findings suggest that Board Certification has not been well-publicized in Georgia, teachers who are aware of Board Certification have not been convinced of a need for it, and teachers hesitate to concern themselves with an innovation about which they (a) know nothing, (b) know little, or (c) must sacrifice their time or their money to implement. The issue of knowledge can be dealt with through a publicity campaign put forth in Georgia by NPBTS and/or Georgia's Department of Education. Both organizations, if they believe Board Certification is an appropriate goal for career and technical educators, must encourage teachers to attain that goal. If teachers are being asked to sacrifice time and money—two limited commodities for teachers—to attain the status of Board Certification, then a reward system must be established. This might take the form either of a bonus or a salary increase or an increased opportunity for a sabbatical. Further, some honor or designation that the teacher has such certification should be held as a standard for teachers in the same and other fields.

Does Board Certification for career and technical educators make a difference for students? Recent reports (Bond et al., 2000; NBPTS, 2000b) suggested that students of Board Certified teachers show greater understanding of

the subject being taught than students taught by teachers who are not Board Certified. In addition, Board Certified teachers significantly “outperform” teachers who lack that certification. Such findings should be closely examined to support their validity.

Implications for Practice

The following are implications for practice to increase the level of concern of Georgia career and technical education teachers toward National Board Standards:

1. Workshops sponsored by professional organizations such as the Georgia Association of Career and Technical Educators (GACTE)and other related organizations should be conducted to increase awareness of Career and Technical Education Standards for National Board Certification.
2. State staff development courses could be devoted to familiarizing and assisting career and technical teachers with Career and Technical Education Standards for National Board Certification as well as with the overall certification process required by the Georgia Department of Education.
3. School district-level staff development courses should be devoted to familiarizing and assisting career and

technical teachers with career and technical education standards for National Board Certification standards.

4. Organizations such as the Georgia State Department of Education, the Georgia Professional Standards Board, and local school boards should provide instructional materials regarding Career and Technical Education Standards for National Board Certification to administrators who are likely to be involved in supporting career and technical education teachers during the certification process.

5. Currently, when a teacher successfully completes an undergraduate teacher preparation program, he or she is eligible for a teaching certificate. Colleges of education should incorporate in either a master's degree program or a specialist's degree program elements of the career and technical education standards for National Board Certification so that upon completion of the degree, the graduate is prepared to stand for Board certification.

Recommendations for Further Study

1. Further research should be done to determine the most effective methods available to move secondary career and technical educators from unawareness and nonuse of the innovation, Career and Technical Education Standards for National Board Certification, into full knowledge to achieve beginning and more highly sophisticated use.

2. A follow-up study should be done in a reasonable time period to see if career and technical education teachers Stages of Concern About the Innovation, Career and Technical Education Standards for National Board Certification, have changed.
3. Further research should be done investigating correlations between compensation and teachers' attainment of National Board Certification.

Summary

This study shows that Georgia secondary career and technical teachers are not engaged with the innovation, Career and Technical Standards for Board Certification. Currently, Georgia secondary career and technical education teachers are generally unaware of the innovation or just becoming aware. If attaining Board Certification is defined as a goal by the Georgia Department of Education, then a reward system needs to be developed to support teachers in this quest. In this way, Board Certification will truly be a foundation for positive reform rather than merely one more failed attempt at change.

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APPENDIX A

NATIONAL BOARD FOR PROFESSIONAL TEACHING STANDARDS

CAREER AND TECHNICAL EDUCATION STANDARDS

1. Accomplished career and technical teachers are dedicated to advancing the learning and well being of all students. They personalize their instruction and apply knowledge of human development to best understand and meet their students' needs.

2. Accomplished career and technical teachers command a core body of general career and technical knowledge about the world of work in general and the skills and processes that cut across industries, industry specific knowledge. They draw on this knowledge to establish curricular goals, design instruction, facilitate student learning and assess student progress.

3. Accomplished career and technical teachers efficiently manage their classrooms and create an environment that fosters democratic values, risk taking and a love of learning. In this environment, students develop knowledge, skills and confidence through contextualized learning activities, independent and collaborative laboratory work, and simulated workplace experiences.

4. Accomplished career and technical teachers create an environment where equal treatment, fairness, and respect for diversity are modeled, taught, and practiced by all. They take steps to ensure quality career and technical learning opportunities for all students.

5. Accomplished career and technical teachers foster experiential, conceptual and performance-based student learning of career and technical subject matter and create important, engaging activities for students that draw upon an extensive repertoire of methods, strategies and resources. Their practice is also marked by their ability to integrate career and technical and academic disciplines productively.

6. Accomplished career and technical teachers utilize a variety of assessment methods to obtain useful information about student learning and development, to assist students in reflecting on their own progress and to refine their teaching.

7. Accomplished career and technical teachers develop student career decision-making and employability skills by creating opportunities for students to gain understanding of workplace cultures and expectations.

8. Accomplished career and technical teachers develop in students an understanding of the competing demands and responsibilities that are part of the world of work, and guide students as they begin to balance those roles in their own lives.

9. Accomplished career and technical teachers develop in students self-awareness and confidence, character, leadership and sound personal, social and civic values and ethics.

10. Accomplished career and technical teachers regularly analyze, evaluate, and strengthen the effectiveness and quality of their practice through life-long learning.

11. Accomplished career and technical teachers work with colleagues, the community, business and industry, and postsecondary institutions to extend and enrich the learning opportunities available to students and to ease school to work transitions.

12. Accomplished career and technical teachers work with colleagues and the larger educational community both to improve schools and to advance knowledge and practice in their field.

13. Accomplished career and technical teachers work with families and communities to achieve common goals for the education of all students. (NBPTS, 1997, p.1)

APPENDIX B

PERMISSION TO REPRODUCE STAGES OF CONCERN (SOC) QUESTIONNAIRE

Joyce Pollard, Ed.D.
Director
Office of Institutional Communications and Policy Services
Southwest Educational Development Laboratory
211 E. Seventh Street
Austin, TX 78701-3281

Dear Dr. Pollard:

I am requesting permission to reprint/reproduce (in the case of videotapes) the following:

Soc Questionnaire

I intend to use the reprinted/ reproduced information in the following way/ with the designated audience (please attach examples): To measure the Stages of Concern of Georgia Secondary Vocational Teachers toward Vocational Standards for National Board Certification (I am a doctoral student at the University of Georgia. Dr. Cliff Smith is my committee chair).

In the case of a videotape, I agree to duplicate the tape in its entirety without editing, splicing, or obliterating SEDL's copyright. I further agree to use or distribute the copies at no cost to the designated audience(s). Finally, I agree to give appropriate attribution (citations or reference) to the Southwest Educational Development Laboratory.

Name: Jacqueline S. Huffman

Address: 3515 Morning Ivy Way
Suwanee, GA 30024

Telephone
Numbers: (770) 945-0283 (home)
(678) 482-1025 (office)
(678) 482-1024 (fax)

E-mail: jacqueline_huffman@gwinnett.k12.ga.us

APPROVED: Joyce S. Pollard DATE: 4 February 2000

APPENDIX C

PERMISSION TO REPRODUCE FIGURES FROM SEDL

memorandum

SOUTHWEST EDUCATIONAL DEVELOPMENT LABORATORY, 211 EAST 7TH STREET, AUSTIN, TEXAS 78701-3281

TO: Ms. Jacqueline Huffman

FROM: Dr. Joyce S. Pollard, Director
Office of Institutional Communications

SUBJECT: Permission to reprint and distribute SEDL materials

DATE: 10/23/00

Thank you for your interest in using the **Figure I.2 and Figure III.2 in Measuring Stages of Concern About the Innovation: A Manual for Use of the SoC Questionnaire** distributed by the Southwest Educational Development Laboratory (SEDL).

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Thank you again for your interest in SEDL's materials. If you have questions, please contact Lori Foradory or me at (800) 476-6861.

APPENDIX D

COVER LETTER FOR PILOT STUDY

March 20, 2000

[Click **here** and type recipient's address]

Dear (field):

I am currently a Marketing teacher at North Gwinnett High School and a doctoral student at the University of Georgia. As part of my doctoral program, I will be conducting a survey of randomly selected secondary vocational teachers in the state of Georgia. To ensure that the questionnaire and other materials in my survey are clear, I am conducting a pilot study. Results from this pilot study will determine if the survey is able to begin as planned.

I would be extremely grateful if you would agree to evaluate my proposed research materials. As a fellow vocational teacher, I know how busy you are so I am **not** asking that you complete the Stages of Concerns Questionnaire or the demographic information sheet. Instead, please take a few moments to look over all of the materials enclosed in this envelope and **only** complete the document feedback form. The entire process will take less than 10 minutes to complete.

Answers will remain confidential, as I am interested in the aggregate data only and not individual responses. Information, as it relates to you, will not be shared.
Thank you in advance for participating in my study. Your time and responses are greatly appreciated!

Sincerely,

Jacqueline Huffman
Marketing Coordinator

APPENDIX E

STAGES OF CONCERN (SOC) QUESTIONNAIRE

STAGES OF CONCERN (SoC) QUESTIONNAIRE ITEMS

0 1 2 3 4 5 6 7
Irrelevant Not true of me now Somewhat true of me now Very true of me now

1.	I am concerned about students' attitudes toward this innovation.	0 1 2 3 4 5 6 7
2.	I know of some other approaches that might work better.	0 1 2 3 4 5 6 7
3.	I don't even know what the innovation is.	0 1 2 3 4 5 6 7
4.	I am concerned about not having enough time to organize myself each day.	0 1 2 3 4 5 6 7
5.	I would like to help other faculty in their use of the innovation.	0 1 2 3 4 5 6 7
6.	I have a very limited knowledge about the innovation.	0 1 2 3 4 5 6 7
7.	I would like to know the effect of reorganization on my professional status.	0 1 2 3 4 5 6 7
8.	I am concerned about conflict between my interests and my responsibilities.	0 1 2 3 4 5 6 7
9.	I am concerned about revising my use of the innovation.	0 1 2 3 4 5 6 7
10.	I would like to develop working relationships with both our faculty and outside faculty using this innovation.	0 1 2 3 4 5 6 7
11.	I am concerned about how the innovation affects students.	0 1 2 3 4 5 6 7
12.	I am not concerned about this innovation.	0 1 2 3 4 5 6 7
13.	I would like to know who will make the decisions in the new system.	0 1 2 3 4 5 6 7
14.	I would like to discuss the possibility of using the innovation.	0 1 2 3 4 5 6 7
15.	I would like to know what resources are available if we decide to adopt this innovation.	0 1 2 3 4 5 6 7
16.	I am concerned about my inability to manage all the innovation requires.	0 1 2 3 4 5 6 7
17.	I would like to know how my teaching or administration is supposed to change.	0 1 2 3 4 5 6 7
18.	I would like to familiarize other departments or persons with the progress of this new approach.	0 1 2 3 4 5 6 7
19.	I am concerned about evaluating my impact on students.	0 1 2 3 4 5 6 7
20.	I would like to revise the innovation's instructional approach.	0 1 2 3 4 5 6 7
21.	I am completely occupied with other things.	0 1 2 3 4 5 6 7
22.	I would like to modify our use of the innovation based on the experiences of our students.	0 1 2 3 4 5 6 7
23.	Although I don't know about this innovation, I am concerned about things in the area.	0 1 2 3 4 5 6 7
24.	I would like to excite my students about their part in this approach.	0 1 2 3 4 5 6 7

(Turn Over)

0	1	2	3	4	5	6	7
Irrelevant		Not true of me now		Somewhat true of me now			Very true of me now

25.	I am concerned about time spent working with nonacademic problems related to this innovation.	0 1 2 3 4 5 6 7
26.	I would like to know what the use of the innovation will require in the immediate future.	0 1 2 3 4 5 6 7
27.	I would like to coordinate my effort with others to maximize the innovation's effects.	0 1 2 3 4 5 6 7
28.	I would like to have more information on time and energy commitments required by this innovation.	0 1 2 3 4 5 6 7
29.	I would like to know what other faculty are doing in this area.	0 1 2 3 4 5 6 7
30.	At this time, I am not interested in learning about this innovation.	0 1 2 3 4 5 6 7
31.	I would like to determine how to supplement, enhance, or replace the innovation.	0 1 2 3 4 5 6 7
32.	I would like to use feedback from students to change the program.	0 1 2 3 4 5 6 7
33.	I would like to know how my role will change when I am using the innovation.	0 1 2 3 4 5 6 7
34.	Coordination of tasks and people is taking too much of my time.	0 1 2 3 4 5 6 7
35.	I would like to know how this innovation is better than what we have now.	0 1 2 3 4 5 6 7

DEMOGRAPHIC INFORMATION

1. Current vocational teaching field:

   _____Agriculture Education
   _____Business Education
   _____Family and Consumer Sciences Education
   _____Health Occupations Education
   _____Marketing Education
   _____Technology Education
   _____Trade and Industrial Education

2. Total years teaching experience in current vocational field: _____ (including this year)

3. Highest educational degree currently held:
   _____High School Diploma
   _____Post-Secondary Technical School Diploma
   _____Two-Year Associate Degree
   _____Bachelor's Degree
   _____Master's Degree
   _____Specialist's Degree
   _____Doctoral Degree

APPENDIX F

PILOT INSTRUMENT FEEDBACK FORM

INSTRUMENT FEEDBACK FORM

After reviewing the material in this packet, please answer the following questions:

1. Please identify the concepts that are being measured, or asked about, in the questionnaire.

   CONCEPTS BEING MEASURED:

2. With the information provided, were you able to determine what standards are being measured with the questionnaire? (Please circle) Yes No

   If no, what additional information is needed to enable you to determine what standards are being measured?

3. Could you have completed the questionnaire with the information provided? (Please circle) Yes No

4. Were the directions clear and specific? (Please circle) Yes No

   If no, which specific information in the directions needs to be clarified?

Name of Reviewer
School
Teaching Field

Thank you for your time in completing this feedback form.

Jacqueline Huffman
North Gwinnett High School

APPENDIX G

OVERVIEW OF THE NATIONAL BOARD FOR PROFESSIONAL TEACHING STANDARDS AND THE VOCATIONAL EDUCATION STANDARDS FOR NATIONAL BOARD CERTIFICATION

OVERVIEW OF THE NATIONAL BOARD FOR PROFESSSIONAL TEACHING STANDARDS AND THE VOCATIONAL EDUCATION STANDARDS FOR NATIONAL BOARD CERTIFICATION

The Carnegie Task Force on Teaching as a Profession in its 1986 report, *A Nation Prepared*, called for the creation of a national board to set professional teaching standards. The National Board for Professional Teaching Standards (NBPTS) was created the next year with the support of state governors, teacher union and school board members, business executives, foundations, college and university officials. The Board is comprised of 63 members, mostly teachers, who form the Board of Directors (NBPTS, 1997). The Board's mission is:

- to establish high and rigorous standards for what accomplished teachers should know and be able to do
- to develop and operate a national voluntary system to assess and certify teachers who meet these standards
- to advance related education reforms for the purpose of improving student learning in American schools (NBPTS, 1997).

The NBPTS bases all subject area standards on 5 core propositions that the Board feels should apply to any teacher:

1. Teachers are committed to students and their learning.
2. Teachers know the subjects they teach and how to teach those subjects to students.
3. Teachers are responsible for managing and monitoring student learning.
4. Teachers think systematically about their practice and learn from experience.
5. Teachers are members of learning communities (NBPTS, 1997).

The requirements recommended by the Vocational Standards Committee for National Board Certification are organized into the following thirteen standard statements and provide for the wide variety of fields embraced by vocational education:

1. Accomplished vocational teachers are dedicated to advancing the learning and well being of all students. They personalize their instruction and apply knowledge of human development to best understand and meet their students' needs.

2. Accomplished vocational teachers command a core body of general vocational knowledge about the world of work in general and the skills and processes that cut across industries, industry specific knowledge. They draw on this knowledge to establish curricular goals, design instruction, facilitate student learning and assess student progress.

3. Accomplished vocational teachers efficiently manage their classrooms and create an environment that fosters democratic values, risk taking and a love of learning. In this environment, students develop knowledge, skills and confidence through contextualized learning activities, independent and collaborative laboratory work, and simulated workplace experiences.

4. Accomplished vocational teachers create an environment where equal treatment, fairness, and respect for diversity are modeled, taught, and practiced by all. They take steps to ensure quality vocational learning opportunities for all students.

5. Accomplished vocational teachers foster experiential, conceptual and performance-based student learning of vocational subject matter and create important, engaging activities for students that draw upon an extensive repertoire of methods, strategies and resources. Their practice is also marked by their ability to integrate vocational and academic disciplines productively.

6. Accomplished vocational teachers utilize a variety of assessment methods to obtain useful information about student learning and development, to assist students in reflecting on their own progress and to refine their teaching.

7. Accomplished vocational teachers develop student career decision-making and employability skills by creating opportunities for students to gain understanding of workplace cultures and expectations.

8. Accomplished vocational teachers develop in students an understanding of the competing demands and responsibilities that are part of the world of work, and guide students as they begin to balance those roles in their own lives.

9. Accomplished vocational teachers develop in students self-awareness and confidence, character, leadership and sound personal, social and civic values and ethics.

10. Accomplished vocational teachers regularly analyze, evaluate, and strengthen the effectiveness and quality of their practice through life-long learning.

11. Accomplished vocational teachers work with colleagues, the community, business and industry, and postsecondary institutions to extend and enrich the learning opportunities available to students and to ease school to work transitions.

12. Accomplished vocational teachers work with colleagues and the larger educational community both to improve schools and to advance knowledge and practice in their field.

13. Accomplished vocational teachers work with families and communities to achieve common goals for the education of all students.

APPENDIX H

COVER LETTER FOR STUDY

April 24, 2000

«NAME»
«SCHOOL»
«ADDRESS»
«CITY», «STATE» «ZIP»

Dear:

I am currently a Marketing teacher at North Gwinnett High School and a doctoral student at the University of Georgia. As part of my doctoral program, I am conducting a survey of randomly selected secondary vocational teachers in the state of Georgia. Your feedback will assist in describing the concerns of secondary vocational teachers towards Vocational Education Standards for National Board Certification. Since Governor Barnes has included Board Standards as one part of Georgia's education reform plan, your concerns are important. I have enclosed a brief overview of the standards for you to review.

As a fellow teacher, I know how valuable your time is. Realizing this, the stages of concern questionnaire will only take about **10** minutes to complete. Your response is critical so please return the completed questionnaire and demographic information form in the enclosed self-addressed, stamped envelope today (if possible!) but no later than May 8, 2000.

Answers will remain confidential as I am interested in the aggregate data only and not individual responses. Information, as it relates to you as an individual, will not be shared. The questionnaire has been numbered to allow me to know who has returned the questionnaire, **not** to track responses. Your participation is voluntary and you are of course free to withdraw without penalty. There are no risks, discomforts, or stresses involved in completing this survey.

Thank you so much for participating in my research of Board Standards for Vocational Teachers. Your time and responses are greatly appreciated. You may contact me at North Gwinnett High School (770) 482-1025 or at home (770) 945-0282 or my committee chair Dr. Cliff Smith at (706) 542-4208 should you have any questions or concerns regarding my study.

Sincerely yours,

Jacqueline Huffman
Marketing Coordinator

Enclosures

For questions or problems about your rights, please call or write: Ms. Julia Alexander, Human Subjects Office, University of Georgia, 606a Boyd Graduate Studies Research Center, Athens, Georgia 30602-7411; Telephone (706) 542-6514; e-mail address IRB@uga.edu

APPENDIX I

DIRECTIONS FOR COMPLETING THE SOC QUESTIONNAIRE

DIRECTIONS FOR COMPLETING

THE STAGES OF CONCERN (SoC) QUESTIONNAIRE

The purpose of this questionnaire is to determine what people who are using or thinking about using various programs are concerned about at various times during the innovation adoption process. The items were developed from typical responses of school and college teachers who ranged from no knowledge at all about various programs to many years experience in using them. Therefore, a good part of the items on this questionnaire may appear to be of little relevance or irrelevant to you at this time. For the completely irrelevant items, please circle a "0" on the scale. Other items will represent those concerns you do have, in varying degrees of intensity, and should be marked higher on the scale.

For example:

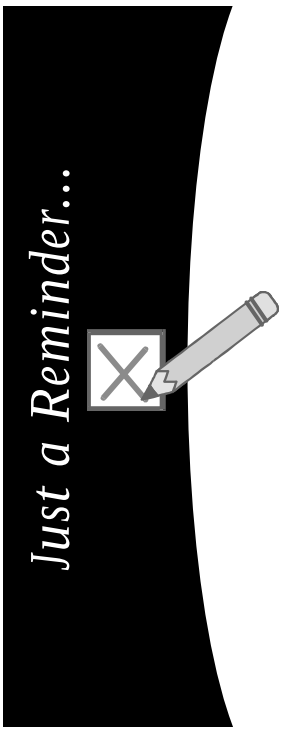
This statement is very true of me at this time.	0 1 2 3 4 5 6 (7)
This statement is somewhat true of me now.	0 1 2 3 4 (5) 6 7
This statement is not at all true about me at this time.	0 (1) 2 3 4 5 6 7
This statement is irrelevant.	(0) 1 2 3 4 5 6 7

Please respond to the items in terms of your present concerns, or how you feel about your involvement or potential involvement with Vocational Education Standards for Board Certification. We do not hold to any one definition of this innovation, so please think of it in terms of your own perceptions of what it involves. Since this questionnaire is used for a variety of innovations, the name Vocational Education Standards for Board Certification never appears. However, phrases such as "the innovation," "this approach," and "the new system" all refer to Vocational Education Standards for Board Certification. Remember to respond to each item in terms of your present concerns about your involvement or potential involvement with Vocational Education Standards for Board Certification.

Thank you for taking time to complete this task.

APPENDIX J

FOLLOW-UP POSTCARD



May 15, 2000

Dear Fellow Vocational Educator,

A few weeks ago, you should have received a survey package asking you to complete a short questionnaire about your concerns toward Vocational Education Standards for Board Certification. If you have already returned the questionnaire, thank you so much! If you have not, please take a moment to complete the questionnaire and return it in the envelope that was provided or fax it to the number below. If you did not receive the package or need another sent to you, please contact me and I will send another package to you.

I know that you are very busy and your time is valuable. I cannot thank you enough for your participation!

Sincerely,

Jacqui Huffman

Jacqueline Huffman
Marketing Coordinator
North Gwinnett High School
Phone: (678) 482-1025
Fax: (678) 482-1024
Email: jacqueline_huffman@gwinnett.k12.ga.us

APPENDIX K

HUMAN SUBJECTS APPROVAL FORM

The University of Georgia
Office of The Vice President for Research
DHHS Assurance ID No. : M1047

Institutional Review Board
Human Subjects Office
606A Graduate Studies Research Center
Athens, Georgia 30602-7411
(706) 542-6514; 542-3199
Fax No. (706) 542-5638

APPROVAL FORM

Date Proposal Received: 2000-04-06 **Project Number:** H2000-10539-0

Name	Title	SS Number	Dept/Phone	Address	Email
Ms. Jacqueline Huffman	MI	259417788	Occupational Studies Rivers Crossing 678-482-1025	3515 Morning Ivy Way Suwanee GA 30024	

Title of Study: STAGES OF CONCERN OF SECONDARY VOCATIONAL TEACHERS TOWARD THE NATIONAL BOARD STANDARDS FOR VOCATIONAL CERTIFICATION

45 CFR 46 Category: Administrative 2 Modifications Required for Approval and Date Completed:

Approved : 2000-04-03 Begin date : 2000-04-03 Expiration date : 2000-08-31

NOTE: Any research conducted before the approval date or after the end data collection date shown above is not covered by IRB approval, and cannot be retroactively approved.

Number Assigned by Sponsored Programs: **Funding Agency:**

Form 310 Provided: No

Your human subjects study has been approved as indicated under IRB action above.

Please be aware that it is your responsibility to inform the IRB . . .
. . . of any significant changes or additions to your study and obtain approval of them before they are put into effect; . . .
. . . that you need to extend the approval period beyond the expiration date shown above; . . .
or, . . .
. . . that you have completed your data collection as approved, within the approval period shown above, so that your file may be closed.

For your convenience in obtaining approval of changes, extending the approval period, or closing your file, we are providing you with a blue Researcher Request form. Detach this blue form, complete it as appropriate, sign and date it, then return it to the IRB office. Keep this original approval form for your records.

Copy:
Dr. Clifton L. Smith

Julia Alexander

Julia Alexander, M.A.,
Chairperson, Institutional Review Board

APPENDIX L

CAREER AND TECHNICAL EDUCATION TEACHER’S TEACHING EXPERIENCE IN CURRENT FIELD

Career and Technical Education Teacher's Teaching Experience in Current Field

Career and Technical Education Teaching Field	n	%	<3	%	>=3	%
Agriculture Education	8	6.2%	1	12.5%	7	87.5%
Business Education	38	29.2%	4	10.5%	34	89.5%
Family and Consumer Sciences	33	25.4%	2	6.1%	31	93.9%
Health Occupations Education	5	3.8%	1	20.0%	4	80.0%
Marketing Education	7	5.4%	2	28.6%	5	71.4%
Technology Education	20	15.4%	2	10.0%	18	90.8%
Trade and Industrial Education	19	14.6%	2	10.5%	17	89.5%
Total	130	100%	14	n/a	116	n/a

APPENDIX M

CAREER AND TECHNICAL EDUCATION TEACHERS

BY HIGHEST DEGREE ATTAINED

Career and Technical Education Teachers

by Highest Degree Attained

Teaching Field	Two Year Associate Degree		Bachelor's Degree		Master's Degree		Specialist's Degree		Doctoral Degree	
	N	%	N	%	N	%	N	%	N	%
Agriculture Education	0	0%	2	4%	3	6%	3	16%	0	0%
Business Education	0	0%	13	26%	19	37%	6	32%	0	0%
Family and Consumer Sciences	0	0%	19	38%	11	21%	2	11%	1	33%
Health Occupations	1	17%	3	6%	0	0	1	5%	0	0%
Marketing Education	0	0%	1	2%	5	10%	1	5%	0	0%
Technology Education	0	0%	5	10%	10	19%	3	16%	2	67%
Trade and Industrial Occupations Education	5	83%	7	14%	4	8%	3	16%	0	0%
Total	6	100%	50	100%	52	*101%	19	*101%	3	100%

APPENDIX N

COMPARISON OF TEACHERS IN STUDY SAMPLE TO U.S. AND STATE OF GEORGIA TEACHERS BY DEGREE AND YEARS OF TEACHING EXPERIENCE

Comparison of Teachers in Study Sample to U.S. and State of Georgia Teachers by Degree and Years of Teaching Experience

Selected Characteristics	Total	Percent of Teachers By Highest Degree Earned						Percent of Teachers by Years of Teaching Experience	
		No Degree	Associate	Bachelor's	Master's	Specialist	Doctor	Less than 3	3 or more
All Teachers (United States)	2,561,294	0.6	0.2	52.0	42.0	4.6	.07	9.7	90.3
All Secondary Teachers (United States)	1,230,013	0.9	0.3	48.2	44.4	5.1	1.1	9.7	90.3
Secondary Vocational/ Technical Teachers (United States)	113,269	7.3	2.3	45.2	39.9	4.7	0.5	6.8	93.2
All Georgia Teachers	74,907	*	*	48.9	42.5	7.7	.2	13.3	86.7
Sample	130	0.0	4.6	38.5	40.0	14.6	2.3	10.8	89.2

*not reported

SOURCE: United States Department of Education Office of Educational Research and Improvement, 2001