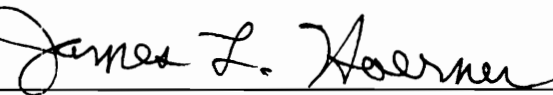# STAGES OF CONCERN
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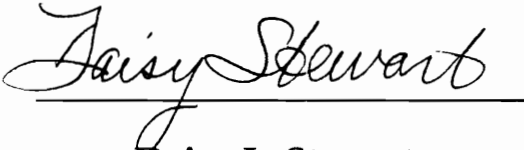# IN VIRGINIA

by

Brenda Dingus Long

Dissertation submitted to the Graduate Faculty of the

Virginia Polytechnic Institute and State University

in partial fulfillment of the requirements for the degree of

DOCTOR OF EDUCATION

in

Vocational and Technical Education

APPROVED:

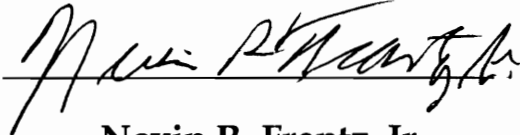James L. Hoerner, Chairman

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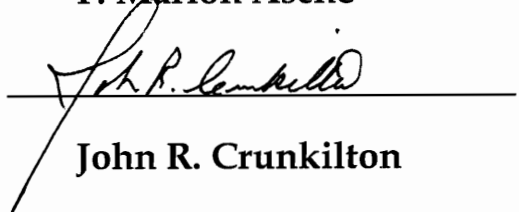
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November, 1994
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STAGES OF CONCERN
IN THE IMPLEMENTATION OF
TECH PREP PROGRAMS IN VIRGINIA

by

Brenda D. Long

(ABSTRACT)

Curriculum innovations, such as Tech Prep, provide practitioners an avenue to change expectations, attitudes, teaching styles, and organizational structure. However, the benefits of educational innovations are not fully realized until those practitioners, such as administrators, academic teachers, vocational teachers, and guidance counselors, adopt and implement change in the classroom. The purpose of this study was to determine the concerns of Tech Prep practitioners at the secondary level in the state of Virginia as measured by the Concerns Based Adoption Model (CBAM).

The population for this study was 322 individuals consisting of administrators, academic teachers, vocational teachers and guidance counselors involved in implementation of Tech Prep programs for two years or longer. Based on the findings of this study the following conclusions are presented.

Based on the theory of the CBAM and the mean scores of the Stages of Concern, indications are these practitioners are becoming experienced users of the Tech Prep concept.

The two highest SoC mean scores for the four groups were either Collaboration or Consequence Stage. It was concluded that staff development should relate to strategies necessary to increase student outcomes and cooperation and coordination of others.

Practitioners involved with Tech Prep have passed the self-concerns (Awareness, Informational, and Personal Stages) and task-concerns (Management). The Stages of Concern for all groups evolved around impact-concerns (Consequence, Collaboration, and Refocusing Stages).

It was concluded that the level of involvement by administrators, academic teachers, and vocational teachers during implementation of Tech Prep is related to the Stages of Concern. There was not a significant relationship between the Stages of Concern and level of involvement for counselors.

Selected recommendations drawn from the findings and conclusions are:

- Attention should continue to focus on concerns, attitudes and expectations of practitioners as they proceed with the continuation of Tech Prep in Virginia.

- This study should be replicated with larger sample sizes and questionnaires submitted at the beginning of the innovation adoption and at designated periods after the implementation process. Such longitudinal studies may determine linkage between time, staff development activities, integration of vocational and academic studies, and the SoC of practitioners.

- Focus by teacher educators, the Virginia Department of Education staff, vocational-technical and academic personnel, should concentrate on collaborative techniques and student competencies. It is recommended that policy be developed to include extensive professional development and increased dialogue among practitioners as they implement Tech Prep programs.

DEDICATION

There was never a doubt to whom this work would be dedicated. One person always makes an impact on our lives in numerous ways. My mother, Nina Rose Dingus, was that person. As I worked on each educational endeavor, mother would always provide encouragement, even though she may not agree, or even understand why, I was pursuing such goals. But in the end she would say, "If you are going to start something, be sure to finish it." She never stopped until she was finished. Mother was a source of guidance, teaching, leadership, energy, determination, and drive. Even in death, mother's teaching, guidance, and most of all, her love are still felt and treasured. I learned so much from this wonderful and courageous woman; her influence will live with me forever.

I dedicate this work to you, Mother. I love you and I have finished.

ACKNOWLEDGMENTS

The academic rigor and challenge of completing a doctoral dissertation involves many individuals, such as faculty, family and friends. Although this dissertation bears my name, it would not be appropriate to take all the credit. I would like to thank those individuals who were there to give me an occasional push, who spoke words of encouragement and motivation, or who just listened.

Committee chair, Dr. James Hoerner, deserves special recognition for his encouragement and assistance throughout the entire process. (Those 6:30 a.m. and 10:30 p.m. telephone calls to discuss the document really were beyond the call of duty!) He had a vision for me to pursue this degree long before I did.

Committee members, Dr. Daisy Stewart, Dr. John Crunkilton, Dr. Nevin Frantz, and Dr. Marion Asche gave their time and effort to help me produce this dissertation. Each, in his/her own way, guided me through hurdles (or was it hoops?), provided support, and much needed focus. Each individual provided time and an enormous amount of discussion when needed.

Dr. Edmond Smith and Teresa Pruett of Southwest Virginia Community College readily supplied technical assistance. Without their cooperation, I could not have moved so quickly with this project.

Dr. Niel Edmunds provided valuable information and suggestions which were, many times, not what I wanted to hear; but in the final analysis he always had an answer.

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Chapter 1

Introduction

The education community is at the center of a national policy debate. This debate focuses on the changing nature of work and whether or not today's schools have the ability to provide the future workforce with the necessary knowledge and skills. Analysts predict that increasing numbers of both high and low level occupational skills will require employees with strong reading ability, knowledge of science and technology, and problem-solving capability. The United States Department of Education has been critical of vocational education programs, and employers often report that traditional school programs are not providing students with the competencies needed in the workplace (Selvin, Oakes, Hare, Ramsey, & Schoeff, 1990).

Policy discussions usually draw connections between the future workforce preparation and the United States' economic productivity and competitiveness. Since the nation's economic standing remains unstable, the training of future workers is more than a mere technical concern. Vocational education and training must be connected with future workplace needs (Selvin et al., 1990). According to A Nation At Risk (National Commission on Excellence, 1983), on the international level, knowledge, learning, information, and skilled intelligence are the most valuable employee attributes throughout the world. Deficiencies in technical and intellectual abilities are especially apparent when the demand is for highly skilled workers in such rapidly growing fields as computers and computer-controlled equipment, laser technology, and robotics, as well as such

increasingly technology dependent areas as health care, medical science, energy production, food processing, construction, the military, and numerous industrial sectors. Therefore, the workforce requires workers to be highly skilled, adaptive, and have cognitive skills that enable them to continue to learn and adjust to new work situations (United States Department of Labor, 1989).

The goal of a qualified workforce requires equal effort on the part of schools, employers, and learners. Schools and colleges must encourage skill development that is more in tune with the demands of a rapidly changing world and set higher standards for their students. Employers must pick up where schools leave off, encouraging continuing education in the work environment. For their part, learners must view education as a life-long endeavor (National Commission on Excellence, 1983). The document Work-Based Learning:Training America's Workforce (U. S. Department of Labor, 1989) reported that "recent studies estimate that the occupational half-life, which is the span of time it takes for one half of workers' skills to become obsolete, has declined from 7 to 14 years to 3 to 5 years" (p. i).

Vocational Education Reform

To address these critical issues, educational initiatives were directed toward the vocational education enterprise and, in doing so, presented the challenge to provide change and leadership. Among the elements of change gaining popularity and creating major expectations is the Tech Prep movement. Congress, in writing the legislation which would put resources

in the educational community, and specifically the vocational education community, has high expectations for Tech Prep.

During the re-authorization of the Carl D. Perkins Vocational and Applied Technology Education Act Amendments of 1990, the U. S. Congress authorized up to $125 million to be spent on Tech Prep programs. The support of Congress was demonstrated by the inclusion of Tech Prep as a separate allocation under Title III State-Administered Programs in the Perkins Act (Brustein, 1993). Tech Prep programs are expected to firmly integrate academic and vocational education, and are grounded in some of the most important principles upon which vocational education is based (Buzzell, 1993). As stated by Buzzell, (cited in Brustein, 1993), these principles include the belief that academic learning and occupational skill development are inextricably linked. Furthermore, Tech Prep is designed to help students see a purpose and a real-life connection between what they learn in school and their future work lives, as well as to prepare students to leave school ready for work and further learning.

Faced with the concerns expressed in reports of the 1980s and early 1990s, federal policymakers, educators, representatives from vocational education associations, and business leaders also called for changes in vocational education (Secretary's Commission on Achieving Necessary Skills, 1991; National Commission on Excellence, 1983). In 1984, the National Commission on Secondary Vocational Education published The Unfinished Agenda as a response to these national reports documenting the deficiencies in the academic preparation of American students and the need

for school reform (Dornsife, 1992). As cited by Dornsife (1992), the Commission stated:

> Secondary schools must offer vocational programs that provide students with theory and application of academic material, the development of general employability skills, training in specific occupational skills, and career guidance. These programs should also provide students with a thorough awareness of career development before entering high school, and ensure a smooth transition to postsecondary institutions in order to continue their training. A transition . . . is fostered through articulation efforts such as coordinated **tech prep** curriculum. (p. 10)

Bragg (1992) stated that most, if not all, "significant curriculum and administrative changes currently take place at the secondary level" (pp. 3-1). Schools continue to need to educate more students to increasingly higher levels and to use resources more effectively.

The significance of the federal support for Tech Prep is that national legislation demonstrated a renewed effort to create technical preparatory curricula. This curricula would be in conjunction with effective articulation programs between secondary and postsecondary institutions. The Perkins Act "promotes the development of curricula that can enhance the learning process, strengthen relationships among secondary districts, postsecondary institutions, job training agencies, and local employers, as well as increase the rates of student retention and the successful entry of students into work or postsecondary education" (Dornsife, 1992, pp. 12-13).

The current educational system is directed toward the needs of the college-bound, and fails to offer the school-to-work transition needed for the majority of students who leave high school to enter the workforce. In order to foster a high-productivity, high-wage future with highly-skilled, highly-motivated workers, the educational system must chart a sharp change of course (National Center on Education and the Economy, 1990).

The Tech Prep initiative introduced by Parnell (1985) has caused many high schools and colleges to develop programs with a technical training component. Parnell saw Tech Prep both as a restructuring of general education curricula and as a way to reach the middle two quartiles of the school population. Bragg (1992) stated, "The content of the program should be a foundation of basic proficiency development in math, science, communications, and technology in an applied setting" (pp. 2-7). The program begins with a sequence of study aimed at providing a solid academic foundation based on real-life applications in high school and continues through at least two years of post-secondary education or apprenticeship. This educational plan effectively addresses some of the key differences in student needs, backgrounds, and learning styles. The student is given the lifelong learning competencies and flexibility needed in the workforce, while at the same time, Tech Prep provides employers with the type of workers needed to remain competitive in the changing marketplace (Hull & Parnell, 1991).

Students emerged from vocational programs unable to relate academic skills to the industrial workplace. Attention arose concerning the need to modify the structure of vocational education. During the period of

the 1980s when rapid technological changes were sweeping the marketplace, the newly created jobs required greater sophistication and preparation (National Center on Education and the Economy, 1990).

Much energy and effort are going into restructuring education and improving the system. Linking education and jobs can be an enormous help in designing and revising curriculum (Buzzell, 1993). There has been a huge amount of discussion on educational innovation and change in school systems. These changes should ensure work-relevant learning experiences for students. Hoerner (1993) stated that in order for major reform initiatives to be successful, classroom teachers and practitioners who interact with students must recognize not only the need to change, but also how to change.

As with any educational reform, once a change is initiated, new programs encounter a variety of difficulties. According to Hull and Parnell (1991), teachers think in terms of issues and obstacles while school administrators think in terms of the barriers that need to be overcome in order to implement Tech Prep programs. Tech Prep is an innovative concept which seeks to restructure education. Not surprisingly, the literature review suggests that such change will meet with more than a little resistance and concern. Hultman (1979) stated, "Resistance is a state of mind reflecting unwillingness or unreceptiveness to change" (p. 50). Achieving the maximum benefits of restructuring will require minimizing resistance from those affected. Managers of change are required to understand the nature of resistance behavior, attitudes, and feelings, and understand the relationship between these and other factors which influence

them. With this knowledge, resistance to change can be minimized and acceptance and support can be maximized (Judson, 1991).

It is imperative that teachers play a key role in the design and implementation of change. According to Cunningham, Hillison, and Horne (1985), if an innovation in vocational education is to be adopted, participation of classroom teachers is crucial; this participation largely depends on the degree to which the teachers are comfortable with the innovation. Additional change literature supports the postulate that without the support of teachers, few educational reforms are successful (Hall & Loucks, 1978; Fuller, 1969; Fullan, 1982).

In assessing the effectiveness of change, Rogers (1992) reported that individual concerns about the innovation should be examined and considered to determine the stage of the implementation process. Historically, teachers have been passive recipients of change rather than active participants. Teachers participate more eagerly in change if they have an active involvement in the development or initiation of the intended change (Hord, Rutherford, Huling-Austin, Hall, 1987). According to Pritz and Crowe (1987), integration of academic concepts and vocational skills will become the responsibility of both academic and vocational teachers. This responsibility will require teachers to change classroom procedures, curricula, and teaching techniques which they have practiced for years. Therefore, in order to facilitate change, it is crucial to understand the innovation/change process and how it relates to the adoption and implementation areas of a new initiative such as Tech Prep.

Implementation of Tech Prep programs can be enhanced by determining the practitioners' attitudes and concerns about the innovation.

Purpose of Study

The purpose of this study was to determine the Stages of Concern of Tech Prep practitioners at the secondary level in the state of Virginia. These practitioners were in the process of adopting an innovative concept through the implementation of Tech Prep. The Stages of Concern held by these individuals about the adoption of the educational innovation, called Tech Prep, was measured by using the Concerns Based Adoption Model and instrumentation.

Research Objectives

This study addressed the following research objectives:

1. To determine the Stages of Concern profiles of administrators, academic teachers, vocational teachers, and guidance counselors involved in implementation of Tech Prep in secondary schools and vocational centers in Virginia.

2. To examine and interpret the differences among group profiles in the Stages of Concern of administrators, academic teachers, vocational teachers, and guidance counselors.

3. To assess whether the highest Stages of Concern for each group are related to the levels of involvement identified as participation in teaching activities, workshops, seminars, curriculum writing, or steering committees.

Assumptions

As stated by Brown and Battist (1992), Tech Prep has been identified as one of the most significant innovations in education in years. Therefore, it is assumed that Tech Prep is a potentially worthwhile educational reform and that practitioners involved have a certain level of interest.

Delimitations

The following delimitations are associated with the study:

1. The population for the study was delimited to secondary schools and vocational technical centers that were participating in a Tech Prep consortium and had implemented programs for at least two years.

2. The population was delimited to those academic teachers, vocational teachers, and guidance counselors who were identified by the school administrator as participating in Tech Prep programs.

Definition of Terms

For the purposes of this study, the following terms are defined.

Academic teachers - individuals in secondary schools who teach courses in general education requirements (English, math, science, and social studies and are participating in a Tech Prep consortium.

Concerns - A term Hall (1979) uses to ". . . represent a composite description of the various motivations, perceptions, attitudes, feelings, and

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mental gyrations experienced by a person in relation to an innovation" (p. 203).

Concerns-Based Adoption Model - A model, according to Rutherford, Hall, and Huling (1983), designed for ". . . the development of knowledge about and new understandings of the change process and the provisions of tools and assistance for practitioners involved with the implementation of change in schools" (p. 133). The Concerns-Based Adoption Model was developed based upon extensive experience in implementing educational innovations.

Guidance counselors - individuals providing career counseling to students in secondary schools and vocational technical centers that are participating in a Tech Prep consortium.

Implementation - As defined by Dennison (1993) ". . . all of the events, actions, and decisions involved in putting an innovation to use" (p. 11).

Levels of involvement - participation in teaching activities, workshops, seminars, curriculum writing or steering committees as related to Tech Prep implementation.

Profile - patterns of Stages of Concern scores in order to determine highest and lowest concerns stage.

Secondary school administrators - individuals responsible for administering programs in secondary schools and vocational technical centers that are participating in a Tech Prep consortium in Virginia.

Stages of Concern - categories of concern identified by adopters of innovation as awareness, informational, personal, management,

consequence, collaboration, refocusing. These concerns change as users progress through the stages and become increasingly skilled in using the innovation.

Tech Prep - As defined by Hoerner, Clowes, Lachowicz, Wehrley, and Hammons (1992), Tech Prep programs

> . . . consist of two years at the secondary level plus either two years of higher education or at least two years of apprenticeship training, with a common core of mathematics, science, communications, and technologies and leading to an associate degree or certification. Some of the program goals set forth in the Perkins Act are that (a) an articulation agreement must be developed between educational agencies involved in the program, (b) training programs must be provided for both teachers and counselors, and (c) equal access must be available for special populations. (p. 5)

Vocational teachers - individuals employed in a vocationally funded instructional program at secondary high schools or vocational technical centers that are participating in a Tech Prep consortium.

<u>Chapter Summary</u>

This chapter has focused on the evidence of the changing nature of work and whether or not today's schools have the ability to provide the future workforce with the necessary knowledge and skills. In writing the Carl D. Perkins Vocational and Applied Technology Education Act of 1990, Congress put resources in the educational community and specifically in the vocational education community to implement Tech Prep programs.

These programs are expected to integrate academic and vocational education studies and assist students to make the connections between what they learn in school and their future work lives. Tech Prep is an innovative program which represents change. The literature examined suggests that such an innovation will meet with resistance and concerns. In order to be successful with this innovation, administrators and others who seek to implement change, must be aware of the attitudes and concerns of the practitioners.

Chapter 2

Literature Review

Introduction

This chapter presents a review of literature concerning educational reform, specifically focusing on vocational education and Tech Prep, innovation adoption theories, the Concerns Based Adoption Model (CBAM), and research using the CBAM. The need for vocational education to meet the demands of a changing technical workforce is also detailed herein, with an outline of the concept of change and what is meant by successful implementation of an innovation.

Educational Reform Issues

American education is being attacked by critics whose underlying themes are reiterated by such reports as the National Commission on Excellence in Education's A Nation At Risk (1983), the William T. Grant Foundation Commission on Work, Family and Citizenship's The Forgotten Half (1988), Secretary's Commission on Achieving Necessary Skills [SCANS] (1990) and others. Many young people emerge from high school unprepared for either college or work, while the number of traditional jobs continues to shrink, and new jobs are demanding both greater preparation and technical sophistication. Since this situation had significant political implications, educational and political leaders needed to act quickly and effectively in dealing with these issues. The result was that these leaders, in their zeal for quick solutions, concentrated their efforts on

increased support for teaching mathematics and science. However, many experts agreed that the movement must be broadened and directed toward reform and excellence throughout the curriculum (National Commission on Excellence in Education, 1983).

The report, A Nation At Risk, also supported the concept that ". . . secondary school curricula have been homogenized, diluted, and diffused to the point that such a curricula no longer have a central purpose . . . Students migrated from vocational and college preparatory programs to 'general track' courses in large numbers" (National Commission on Excellence, 1983, p. 18).

Asche (1994) stated that during the period of educational reform efforts, vocational education was not recognized as an active avenue for educational change. He reported: "While the basis of many of the proposed reforms is economics, most have failed to deal adequately with the role of vocational and technical education in preparing and retraining the nation's workforce" (p. i).

With the focus of educational reforms on academic skills, little attention was paid to vocational and technical education. Even though the reforms centered on competition in the global marketplace, career education was omitted as a means for reform. The Carl D. Perkins Vocational and Applied Technology Act of 1990 (Perkins II) encompasses changes related to the education reform initiatives (Asche, 1994).

Wirt (1991) stated that one of the major changes in Perkins II was a shift from the traditional job-skills orientation of vocational education toward a broader purpose. This purpose included using vocational

education as a vehicle for learning academic and other thinking skills, as well as linking thought with action.

According to a report from the National Center on Education and the Economy titled America's Choice: High Skills or Low Wages! (1990), the educational system is oriented toward the needs of the college-bound and provides little for the majority of youths who do not go to four-year colleges. Yet, by the year 2000, 80% of the jobs in America will not require a baccalaureate degree. Many of the non-college bound students know that their performance in high school will have little or no impact on the type of employment they manage to find. As a result, most of these students wander around the labor market moving from one low paying job to another without being seriously trained for advancement. Little or no assistance is available for students to make this transition from school to work, and this reinforces the idea that secondary schools are not organized to meet the needs of the employers or work-bound students (National Commission on Excellence in Education, 1983; William T. Grant Commission on Work, Family and Citizenship, 1988; National Coalition for Advanced Manufacturing [NACFAM], 1993).

American labor policy has not had skill development as its central goal. However, policy initiatives such as educational, social, and economic development have begun to incorporate training as part of their mission. As stated by the National Assessment of Vocational Education,

> . . . of the 19% of a group of recent high-school graduates who entered post-secondary education 11.2% completed a bachelor's degree, 5.9% completed an associate's degree, and 1.9% completed a

certificate within four years. The assessment highlighted the need "to help students choose a field of study, construct a coherent sequence of courses in that field complete the course or program and find a related job". (National Center on Education and the Economy, 1990, p. 51)

According to Johnston and Packard (1987), education and training are the primary systems to preserve and increase the human capital of the nation. The rate at which human capital may be increased depends on the speed and efficiency of the educational system in transmitting knowledge. This formation of human capital plays a direct role in the country's rate of economic growth. This report further states that:

> If the economy is to grow rapidly and American companies are to re-assert world leadership, the educational standards that have been established in the nation's schools must be raised dramatically . . . There is no excuse for vocational programs that "warehouse" students who perform poorly in academic subjects or for diplomas that register nothing more than years of school attendance. From an economic standpoint, higher standards in the schools are the equivalent of competitiveness internationally. (p. xxvii)

Vocational Education and Change

Re-evaluating and reforming existing vocational education programs by creating a relationship between economic, technological, and social forces will help to assure future productivity growth to meet the economy's educational requirements (Bragg, 1992). The quality of education will

determine the ability of the labor force to adapt to changes brought about by the introduction of new technologies designed to enhance productivity in the workplace. Therefore, it is imperative that there is a change in both the educational and the job- training systems in this nation, with a concomitant improvement in the academic and vocational skills for students (Berlin & Sum, 1988).

In the 21st century, the classroom will become the battle-ground for the nation's global economic competitiveness. This will necessitate the United States investing heavily in technical education programs (NACFAM, 1993). The report by the Secretary's Commission on Achieving Necessary Skills (SCANS) stresses that schools should devise new standards, curricula, teaching methods, and materials. SCANS emphasized the need for teachers and schools to assist students to see the relationships between what they study and its application in real-world contexts. The findings of the cognitive science researchers indicate that the most effective way of teaching skills is "in context". Having students learn in a real environment is far superior to having students learn in abstract what they are expected to apply later. When students learn skills in the context of job competencies, knowledge is acquired more rapidly and will more likely be applied in real situations (SCANS, 1991). NACFAM (1993) also supports this emphasis by reiterating the need for a change in the way teachers teach and students learn through the use of experiential and applied learning.

According to Asche (1994), the National Assessment of Vocational Education (NAVE) surveys reported 42% of the school districts added or expanded applied academic courses, 40.5% added or expanded integrated

courses or course materials, and 28.4% added or expanded general or transferal occupational skills training between 1987 and 1992. The survey also indicated the types of activities school districts were involved in while integrating vocational and academic education. As required by Perkins II, Title III, Part E, Tech Prep programs must include a core proficiency in mathematics, science, communications, and technologies.

Changing the relationship between academic and vocational components in high schools is one approach for raising academic competencies and providing a skilled workforce. Concepts are taught more effectively when learning-to-know and learning-to-do are linked (Southern Regional Education Board [SREB], 1989).

While such a change will likely improve student achievement, however, evidence suggests that this will require fundamental changes in the way high schools operate as well. When attitudes and behaviors are firmly embedded, a tremendous amount of time will be required to create new relationships between academic and vocational education (SREB, 1989).

As educational leaders and policymakers consider the trade-offs between reform strategies, their discussions fail to consider the daily realities of the high schools. Change cannot occur unless there is an understanding of how high schools work and what those who run them think about the curriculum and their students. Practitioners' views about the importance of the academic and vocational curriculum and the needs and abilities of the students they serve influence the way educators construct school programs (Selvin et al., 1990).

The publication, The Unfinished Agenda, prepared by the National Commission on Secondary Vocational Education (1984) served as a response to national reports documenting deficient academic preparation of students, and the need for school reform. The emphasis was on improving secondary vocational education based on ". . . building stronger bridges between vocational and academic education to maximize learning and career opportunities . . . Proposed curriculum changes in secondary schools centered on providing theory and application of academic courses, and explicit meaning for vocational courses" (Bragg, 1992, p. 2-6).

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Tech Prep: An Important Aspect of Educational Reform

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In The Neglected Majority (1985), Parnell proposed restructuring general education curricula in order to reach the middle two quartiles of the secondary school population. This population--the neglected majority-- included those students neither in college prep nor vocational education programs. Parnell argued that the content of the program should emphasize a strong foundation in math, science, communications, and technology in an applied setting. In the late 1980s, Tech Prep-type initiatives began appearing across the nation.

During this time, proposals for a new concept in articulation and programs for technical preparation reflected the position that vocational education and training programs are influenced by technological forces (Dornsife, 1992). Hull and Parnell (1991) supported the concept that the rapidly changing technologies signal the need for an educational system that

combines the best in vocational and academic learning, such as teaching academic foundation courses in a vocational setting.

According to Bailey and Merritt (1993), there is a vast difference between skills learned in the classroom and those used on the job. Even though students learn skills needed to perform well in school, those skills may not be adequate outside of school--learning is not transferred. The integration of vocational and academic education is one method to bring the worlds of school and work together. Learning in context is based on the idea that individuals learn basic skills more effectively if such skills are taught in close relationship with everyday activities.

As business leaders faced conditions of changing economic, technological and social forces, they began to agree with policymakers and educators. Thus, a transference of learning became crucial in the workforce. Support soon developed among the three groups for reforms in vocational education and many curriculum changes occurred in secondary and postsecondary institutions. During this time many states reported the establishment of Tech Prep programs among secondary and postsecondary institutions (Dornsife, 1992).

Tech Prep And Innovation Theories

Tech Prep has been identified as one of the most significant educational innovations in years (Brown & Battist, 1992). As an avenue of educational reform, Tech Prep is a vehicle of programmatic change. With established national goals, Tech Prep initiatives may give education a

needed boost in addition to providing an opportunity to implement change (Hoerner, et al., 1992).

Hull and Parnell (1991) stated that due to changes in the way society lives and works, major changes must occur in educational programs and institutions as well. They argued that since curriculum modification was not enough, change must also occur in:

- expectations--high levels of performance must be expected from all our students;
- attitudes--ideas about the quality and worth of technical education and careers must be reevaluated;
- teaching styles--teaching styles and techniques must correspond to the learning styles of all students, not just part of the students;
- organizational structures--segmented, bureaucratic, hierarchical organizations are counterproductive to the initiative and flexible team efforts required of front-line workers [and teachers]. (p. 90)

Planning and implementing Tech Prep is not comprised of simple, short-term procedures, but rather requires a long-term, complex process that results in the restructuring of vocational education. This process should involve the academic and vocational and technical education professionals and be used as a vehicle to restructure the entire educational program. Change in any organization must become an integral part of the organization's culture. All segments of the organization must become knowledgeable about the basic elements of the change, be capable of doing those actions needed, and believe that the actions are worthy of doing.

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Therefore, members of the organizations must be challenged, motivated, nurtured, involved, and provided with adequate support over an extended period of time. Institutional change requires a clear vision and goals that benefit everyone if efforts made to change and weather the transition period are to be successful (Hull & Parnell, 1991).

Hoerner (1991) reported that "necessary reform truly requires a philosophical mind-set change in the minds of all educators--teachers, counselors, and administrators" (p. 3). Even though individuals and organizations recognize the need for change, they tend to resist it. Change is a perceived threat. Because change requires new knowledge, new skills, and new relationships, change can also cause the threat of loss. Significant changes in education ultimately affect the relationship of the teachers, students, and administrators. It may mean giving up the comfort of the familiar and possibly losing the rewards associated with current status and relationships (Hull & Parnell, 1991; Kanter, 1983; Unruh & Alexander, 1974).

In a study funded by the National Center for Research in Vocational Education, Bragg (1992) examined the context in which Tech Prep was being implemented and how it influenced the implementation process. Identification of certain barriers to local Tech Prep initiatives included negative attitudes on the part of educators, parents, and students; conflicts between secondary and postsecondary, and vocational and academic educators; and lack of needed resources. Where Tech Prep was viewed as a total restructuring effort, fear of and resistance to changes lead to

institutional status conflict and difficulties in efforts at collaboration between traditionally separated groups.

Weissglass (1991) stated that the educational needs of the 21st century will require more than just improving textbooks or updating subject matter. Teachers will need to adopt new approaches to students and subjects. Traditionally, teachers do not easily adapt to new approaches, especially those that challenge the culture of the schools. Even though change is an exciting and stimulating process, it usually entails struggle.

Change does not happen immediately, but occurs over a period of time. When individuals develop their own interpretation of the innovation terminology, the innovation is often accepted and implemented. Dennison (1993) stated, "Successful innovations have been dependent upon the developmental processes of individuals through their feelings, thoughts, and practices" (p. 20).

Rogers (1962) discussed the diffusion of innovations as a process by which an innovation spreads. The diffusion process is the development of a new idea from its sources of invention or creation to its ultimate users or adopters. He also implied that not only adoption, but implementation of an innovation is the most important fact in the change process.

Rogers (1962) summarized the adoption theory as the mental process through which an individual passes from first learning about an innovation to final adoption. He also indicated the five stages of the adoption process of the diffusion of an innovation model are awareness, interest, evaluation, trial, and adoption.

An innovation has little merit to the adopter if he/she does not see the advantage it has over the idea it is replacing. It is the adopter's perception of the relative advantage of the innovation that matters (Rogers, 1962).

Hull and Kester (1973) developed a conceptual framework of innovation diffusion strategies. The four elements of this study were the innovation, the advocate, the consumer (intended user) of the innovation, and the strategy for implementing the innovation. The innovation represented the change to be made. The implications of the study were that program evaluators and program managers should examine appropriate dimensions of various innovations when deciding to support, accept, or reject a particular change.

Packard and Jovick (1978) instituted a prediction investigation of factors that could account for variations in the success rate of attempts at educational innovation. Innovation was studied as an unfolding process composed of distinct, but interrelated stages. Success of the innovation was predicated on the basis of information taken from the schools before they actually established their unit organization. Innovation is a lengthy process consisting of discrete, time-ordered stages and must be recognized that planned change is not a simple event. Four stages of innovation were used: adoption, planning, implementation, and institutionalization. In schools where the innovation was first expressed through gains in instructional interdependence, and where interdependence appeared to be a school-wide unit-level phenomenon rather than an isolated teacher-pair phenomenon, the innovation thrived over the long term.

In order for an innovation to be implemented in the classroom, change has to be understood by educators. This understanding has been the avenue of how the innovation improved the current classroom practices. To facilitate an innovation, the focus should be on the individuals, the innovation itself, and the setting in which the innovation is to occurred. Change facilitators have been dependent on how people accept, adapt, and implement the innovation (Dennison, 1993).

In The Meaning of Educational Change, Fullan (1982), pointed out that real change represents a serious personal and collective experience. Whether imposed or voluntarily pursued, change is characterized by ambivalence and uncertainty. If the change is successful, results produce a sense of mastery, accomplishment, and professional growth.

Hall and George (1979) cited Rogers and Shoemaker, 1971, Berman and McLauglin, 1975, Emrick, Peterson, and Agarwala-Rogers, 1977 and Hall and Loucks, 1977, as an additional list of studies documenting the intricacy of educational change. A central theme in these studies is the importance of the teacher's role in the change process. Most often the human element is not given adequate consideration as a key factor. If an innovation is to be successful, the reactions of the practitioners of the program should be considered.

Kester and Howard (1975) stated it was a simple task to identify the proposed innovation. The difficulty, however, was to identify how those proposed changes are initially received or accepted by the intended practitioners. The research study identified factors shown to influence the acceptance of career guidance systems. Based on characteristics of the

advocates, consumers, system, and interrelationships among them, the findings indicated the adoption process occurred in three distinct phases. The variables in each of the domains were attributable to inhibiting or facilitating the adoption of the innovation. The study indicated that factors, other than the innovation, such as context and strategies used by the advocates effect adoption.

Rogers and Shoemaker (1971) found evidence from diffusion research pertaining to user characteristics that affect the willingness to adopt new ideas. Their findings indicated that empathy, dogmatism, and intelligence are major factors in adoption. This supports the position that the utilization of new ideas, from development to use, is a process experienced by individuals, occurring over time.

Schein (1969) developed a model which encompasses change in beliefs, attitudes, and values that occur during socialization, therapy, and other processes involving the person's self or identity. This model includes the stages as (1) unfreezing--creating motivation to change; (2) changing--developing new responses based on new information; and (3) refreezing--stabilizing and integrating the changes.

Emrick and Peterson's study (cited in Hall & George, 1979), reported that change occurs as a process. There are two parallel dimensions occurring: a systemic dimension involving the change in the user environment, and a personal dimension, identifying the change process occurring within individuals. These theories emphasize the personal dimension of the change process and the importance of practitioner reactions to successful innovation adoption.

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Hultman (1979) stated that for growth and development to occur for both individuals and organizations, change is necessary. By its very nature, change requires modifications in the way things are currently handled.

Bennis (1969) stated that planned change is a linkage between theory and practice (i.e. knowledge and action). The process of planned change consists of a change agent, a client system, and the collaborative effort to apply valid knowledge to the client's problems or concerns.

Changes in technology and workplace lead to new social patterns and needs, and these rapid changes indicate that educational institutions need to educate individuals for business and industry. America, once rich in technical skills, can reclaim the competitiveness in the global economy through improving technical skills and productivity (Dennison, 1993). It is imperative that vocational and technical education become a part of educational change to meet the emerging demands of the workforce and the global market. As Brodhead (1991) stated "vocational education holds many of the answers to the educational and employment problems that this nation faces today" (p. 24).

Resulting from changes in federal policy, such as Perkins II, Kolde (1991) stated that integration of academic and vocational education can provide a "better-prepared work force and improved education system . . . and the process for finding technical applications for academic skills must be a cooperative effort" (p. 454). She also identified specific benefits of an integrated curriculum collaboratively designed by academic and vocational teachers. These benefits included better organized teaching materials,

application of concrete and abstract concepts, and a more rigorous curriculum that contains continuity.

Change in education should not be viewed as only a new program, but as creating change in current programs that bring more rigor and structure to them. According to Feldman (1988), the purpose of program change should be to "get the most out of existing programs, do away with the duplication and waste that currently exist, eliminate competition between programs, and overcome the lack of knowledge where it presently exists" (p. 4).

The Concerns-Based Adoption Model

Extensive studies of individuals involved in change in schools and universities were conducted by the University of Texas Research and Development Center during the late 1970s and early 1980s. The Concerns-Based Adoption Model (CBAM) was developed to conceptualize and facilitate educational change. A dimension of this model is the Stages of Concern About the Innovation (Hall, George, & Rutherford, 1986). This model investigates the concerns the users have about an innovation from the time they first become aware of it until they have mastered it. Users' first concerns are how an innovation will affect them on the personal level, while later the concerns shift to the task-related level (Hall & Loucks, 1978). The Stages of Concern (SoC) are: Stage 0-- Awareness; Stage 1-- Informational; Stage 2--Personal; Stage 3--Management; Stage 4-- Consequence; Stage 5--Collaboration; Stage 6--Refocusing. The definition of each stage is detailed in Table 1. The concept of concerns relates to the

Table 1

Stages of Concern About the Innovation

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 of 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 inadequacy to meet those demands, and 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.

Note. Measuring the Stages of Concern About the Innovation: A Manual For Use of SOC Questionnaire, (p. 7) by G. E. Hall, A. A. George, and W. L. Rutherford, 1986, Austin, TX: Southwest Educational Development Laboratory.

feelings, perceptions, motivations, and attitudes of individuals as they become aware of an innovation (Rutherford, Hall, & Huling, 1983).

The focus of change has most often been on a large-scale, system-wide level instead of the individuals that must make the change. Change at the system-wide level is important, but difficult to attain unless the individual members (or users) are involved (Hall, 1975). As reported by Hord, Rutherford, Huling-Austin and Hall (1987), through verification of research, the CBAM was used to develop the following assumptions about change:

1. Change is a process, not an event. Change is a process occurring over time, and recognizing this is an essential prerequisite of successful change implementation.

2. Change is accomplished by individuals. Change affects people, and their role in the process is important. Therefore, individuals must be the focus of attention in implementing a new program.

3. Change is a highly personal experience. Individuals are different and do not behave collectively. Each individual reacts differently to change and some will assimilate a new practice more rapidly than others. Change is more successful when its support is geared to the diagnosed needs of the individual users. If change is highly personal, then different responses and interventions are required. By paying attention to each individual's progress one can enhance the implementation process.

4. Change involves developmental growth. Studies indicate that the individuals involved appear to express or demonstrate growth in

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terms of their feelings and skills. These tend to shift with respect of the new program or practice as individuals pass through a greater degree of experience.

5. Change is best understood in operational terms. Teachers, and others, will naturally relate to change or improvement in terms of what it will mean to them or how it will affect their current classroom practice. Change facilitators can reduce resistance to improvement efforts by addressing questions and communicating with teachers and others involved.

6. The focus of facilitation should be on individuals, innovations, and the context. It is easy to forget that books, materials, equipment, or new programs alone do not make change; only people can make change by altering their behavior. The real meaning of change lies in its human, not its material component (pp. 5-6).

Hall (1975) hypothesized that by using the Stages of Concern About the Innovation concept, individuals move from unfamiliarity and nonuse of an innovation to ultimate, highly sophisticated use of the innovation, and their concerns move through identifiable stages as well. Hall also stressed that change can be planned and facilitated in personalized ways that will increase the effectiveness of the innovation and reduce the trauma that the individual experiences.

Hord et al. (1987) stated that the Stages of Concern (SoC) could be grouped in three dimensions--self, task, and impact. The self-concerns would reflect Stage 0--Awareness, Stage 1--Information and Stage 2--

Personal. This occurs early in the change effort and individuals want to know more about the innovation.

The task-concerns reflect Stage 3--Management. At this stage the individual becomes more intense as final preparations are made for beginning use of an innovation and during the early period of use. The impact-concerns reflect Stage 4--Consequence, Stage 5--Collaboration, and Stage 6-- Refocusing. The individual concerns are directed toward the effect of an innovation on students and what can be done to improve the effectiveness of the program (Hord et al., 1987).

Frances Fuller, a counseling psychologist, pursued a series of in-depth studies of the "concerns" of teachers during the mid- to late-1960s. These studies were approached from a clinical rather than a pedagogical point of view. Through a series of group counseling sessions and longitudinal in-depth interviews of student teachers, Fuller (as cited by Hall, 1986) proposed a developmental conceptualization of the concerns of teachers. The literature provided an independent set of studies under various headings, including problems and anxieties of teachers, and when combined with Fuller's clinical assessments, afforded a basis for characterizing the various kinds of concerns of preservice and inservice teachers. Upon further investigation, it was noted that concerns occur in a natural sequence and are not a direct consequence of the quality of a particular teacher education program (Hall et al., 1986).

Fuller's pioneering work proposed a model for personalized teacher education based on the concerns of teachers, and pursued research into the dynamics of teachers' concerns and their assessment, arousal, and

resolution. This work provided the basis for developing the Stages of Concern About the Innovation dimension of the Concerns-Based Adoption Model. As research and data progressed, it was hypothesized that definite categories of innovation-based concerns could be identified. These concerns change in a logical progression as users become increasingly skilled in using the innovation. (Hall et al., 1986).

A major challenge to managers of change is not only understanding and describing the process of change in the educational enterprise, but also maintaining sight of the individual. Using the hypothesized Stages of Concern (SoC), the Research and Development Center staff developed a model of the complex process of change as it occurs through the adoption of innovations by individuals within formal organizations. Hall, Wallace, and Dossett (1973) developed the first CBAM by proposing the Stages of Concern to be used as a diagnostic tool for assessing where individual members of an organization are in relation to the adoption of various innovations. In addition, the manager of a specified change could then use the diagnostic data in developing a prescription for needed interventions to facilitate the change effort (Hall et al., 1986).

The Concept of Stages of Concern About the Innovation

Facilitators of change can be more effective and change can be more successful if the concerns of teachers are considered. This should reflect the belief in the importance of the personal side of change, particularly from the standpoint of the "front line" user. It is evident that how teachers feel about and perceive change will in large part determine whether or not

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change actually occurs in the classrooms. Therefore, the first stage of the CBAM concept deals with understanding the dynamics of teachers' perceptions of change and adjusting the facilitator's behavior so that they address change from the teachers' point of view (Hall & Hord, 1987).

Hall et al. (1986) described the concept of concerns as the following:

> The composite representation of the feelings, preoccupation, thought and considerations given to a particular issue or task is called concern. Depending on our personal make-up, knowledge and experience, each person perceives and mentally contends with a given issue differently; thus there are different kinds of concerns. The issue may be interpreted as an outside threat to one's well-being, 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 rumination 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 relations to the demand. All in all , the mental activity composed of questioning, analyzing, and re-analyzing, considering alternative actions and reactions, and anticipating consequences is concern. An aroused state of personal feelings and thought about a demand as it is perceived is concern. (p. 5)

With this developmental movement through the stages, certain types of concerns will be more intense, then less intense, before arousal of other types, hence the term "stages". These stage definitions provide a conceptual basis for developing the SoC Questionnaire and interpretation of its data (Hall et al., 1986).

Development of the Stages of Concern Questionnaire

The SoC Questionnaire, validated over a two and one-half year period, was developed to provide a quick-scoring measure of Stages of Concern. Prior to this, Frances Fuller and others spent ten years of measurement, development, and research to study the concerns of teachers about teaching. At the beginning of the development of an SoC measure, many different formats and methodologies were explored. The result was an SoC Questionnaire which was tested for estimates of reliability, internal consistency, and validity with several different samples and 11 different innovations (Hall et al., 1986).

During this extensive research, a 195-item prototype of the SoC instrument was completed by utilizing a stratified sample of public school teachers and college professors to assess various educational changes (Rogers, 1992). The final SoC Questionnaire was then refined into a 35-item questionnaire about an innovation. This 35-item questionnaire was used in cross-sectional and longitudinal studies of 11 different educational innovations and several different validity studies. The results indicated that the SoC Questionnaire accurately measures Stages of Concern About the Innovation (Hall et al., 1987).

In Hall's SoC model there are seven Stages of Concern and individuals experiencing change must pass through these seven stages. In explaining the seven stages, Hall (1979) stated:

> An individual's concerns can move in a developmental progression from those typical of non-users of an innovation to those associated with fairly sophisticated use. For a non-user of an innovation, concerns are about "what the innovation is" and "what it means for me" are relatively intense, and concerns about the impact of the innovation upon students are relatively low. As implementation of the innovations takes place, management concerns begin to increase. Informational and personal concerns begin to decline. (p. 205)

Hord et al. (1987) stated that it is normal and natural for individuals to have these concerns. It is equally important to understand that teachers and administrators will move through these stages at different rates. Hord et al. (1987) further reported:

> Movement through the stages of concern cannot be forced, but with appropriate support and assistance, it can be aided. At the same time, a lack of assistance or the wrong kind of support can interfere with developmental changes in concerns. (p.43)

The research of the CBAM and the concepts of SoC are built upon a positive assumption about change facilitation. One of the major strengths of the CBAM is that it is virtually impossible to manipulate a person's concerns (Hall, 1979).

Studies Using the Concerns-Based Adoption Model

Designed to accommodate any innovation, the CBAM has been used to study a variety of innovations. However, the majority of the studies used to verify the CBAM were in educational settings with innovations of instruction, classroom configuration and instructional administration. The research indicated that the CBAM was an effective instrument to measure significant differences in how individuals addressed implementation of innovations (Green, 1993). Dennison (1993) reported using the CBAM to determine the concerns of secondary and postsecondary vocational and academic classroom teachers, guidance counselors, and administrators regarding Tech Prep. The findings concluded that a significant difference existed between the secondary and postsecondary vocational and academic classroom educators, guidance counselors, and administrators. Four of the seven SoC were higher at the secondary level.

Green (1993) reported no significant differences in SoC among secondary vocational and academic teachers in the southeast participating in Tech Prep programs. However, when placed into one group, regardless of classification, a significant difference in concerns based on the length of time they had been involved with the innovation was determined.

Rogers (1992) utilized the CBAM to ascertain if industrial arts teachers in a midwestern community had accepted technology education. The findings indicated that technology education was not accepted by industrial arts teachers. The respondent's SoC profiles at the refocusing stage signified that the older, more experienced industrial arts teachers

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were revising or altering the technology education curriculum before accepting it.

Broyles and Tillman (1985) investigated the instructional elements of inservice training sessions that prepared teachers to implement innovations. Changes in teachers' concerns were measured by the SoC Questionnaire. The research study results indicated that content topics classified as introduction, skills, organization, and theory were related to changes in teachers' concerns following training. In contrast to previous research, the measure of time spent in training activities were not as critical to resolution of concerns.

The CBAM was utilized by Cross (1991) to examine the professional development component of a corporate sponsored Site-Based Management Cognitive Education initiative during the programs' implementation phase. The findings indicated that teacher perceptions of change, teacher commitment to the project and increased innovation component use were directly related to the amount of coaching, lesson modeling, and facilitator support that teachers received during the implementation phase.

Kozora (1993) reported analysis of implementing cooperative learning using the CBAM to screen willing participants while documenting and analyzing the implementation of cooperative learning by focusing on the needs of the participants. Results indicated SoC decreased and that leaders address concerns as part of any training program in order to increase effective implementation of an innovation.

Roberts (1993) used the CBAM to assess concerns of teachers about collaborative activities within schools involved in school improvement

projects. Results indicated a relationship between the degree of implementation of and commitment to collaboration by teachers over time, developmental levels, experience in the change, and cultural factors within the school.

As reported by Gevirtz (1993), a research study was designed using the CBAM to examine current implementation of job search instruction. A pre-post experimental and control group investigation of changes was devised. The results indicated that there were no differences in pre- and post- measures of SoC for teachers who participated in interventions designed to respond to their identified concerns, as compared to a control group.

Logan (1993) used the CBAM to investigate the relationship between the degrees of use of an innovation and staff development activities. The results indicated that conferences had significant relationships with the degree of use of an innovation being implemented; in-service training related to the innovation and meetings, material development, and evaluation did not have significant relationships to the innovation being implemented; five staff development categories were found to have significant relationships to the innovation; and all projects used a blend of organizational based, individual based, and role based staff development.

Savage (1992) reported an examination of teacher use of curriculum innovation. Using the CBAM, the study found some significant differences in teacher concerns that corresponded to teacher involvement in the development of the curriculum innovation. These findings were consistent with previous literature. There was also lack of significant differences in

some areas of teacher concerns and teacher use of the guide according to involvement in the development of the curriculum.

As reported by Bradley (1992), a study was designed to gain better understanding of program implementation at the local school level and provide further insight into teachers' receptivity to change. The focus of the study was the events and factors that in teachers' perceptions attributed to change in their behavior during the implementation of an innovation. The CBAM instruments used in the study indicated the findings concurred with the teacher change literature, which states that teachers need from twelve to eighteen months of using an innovation to become routine users. The data also indicated basic agreement about what teachers believe greatly influenced their behavior to change and to change their belief about an innovation. These included having appropriate materials to implement the innovation, assistance from the training consultant in the classroom, the innovation have a positive effect on student achievement, frequent peer observation of the innovation being taught in the classroom, interaction with other teachers using the innovation, and inservice training during the first year of program implementation.

Chapter Summary

National reports indicate change is needed in the educational community and especially in the vocational education enterprise. Many reports state that change is imperative. The Tech Prep initiative is an innovative avenue for restructuring vocational education and represents change.

Change will encounter resistance, and in order for Tech Prep to be successfully implemented, attention must be given to the practitioners who are 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 diagnostic information to determine the concerns of practitioners. By understanding these Stages of Concern, determining where the practitioner's concerns are in relation to the SoC, then the change facilitator can devise intervention strategies in order to enhance successful implementation.

Chapter 3

Research Methodology

The purpose of this chapter is to describe the research design, population, instrumentation, data collection procedures, and data analysis.

Research Design

The design employed in the study was descriptive. Descriptive research involves data collection in order to answer questions concerning the current status of the sample being investigated. This type of study systematically describes the facts and characteristics of a given population or area of interest with a certain degree of accuracy (Issac & Michael, 1990).

Population

At the time of this study, May 1994, there were 44 Tech Prep projects in Virginia. There were 32 consortia in the state with each community college and its respective secondary schools constituting the Tech Prep consortium. There were 23 community colleges in Virginia which represented the 23 consortia. Community colleges with multi-campus locations comprised the remaining 9 consortia.

A master list of Tech Prep projects was obtained from the State Director for Tech Prep Programs. By using the development/ implementation grant ending date, it was determined which consortium directors to contact for level of implementation information. The level of implementation identified those programs which had been implemented at least two years. Those school divisions which were in the second year of

implementation were contacted. Administrators, academic teachers, vocational teachers, and guidance counselors involved with implementation of Tech Prep programs were identified. The list did not indicate the number of individuals from each of the four groups. From this information, a population consisting of 322 individuals was obtained.

Instrumentation

The concept of the Stages of Concern About the Innovation (SoC) is the key dimension of the Concerns-Based Adoption Model (CBAM). According to Hall (1979), the SoC describes the feelings, perceptions, and attitudes of individuals as they consider, approach, and implement an innovation. For this study, the innovation is the Tech Prep programs as identified in the Carl D. Perkins Vocational and Applied Technology Education Act of 1990. The SoC questionnaire evolved from Hall's research which hypothesized that individuals entertain seven different stages of concern as they accept an innovation. The 35-item questionnaire represents the seven Stages of Concern, with five items utilized for each stage (Hall et al., 1986) (see Appendix A).

Reliability and Validity of the SoC Questionnaire

According to George (1977), the items representing each stage of the questionnaire were selected in order to maximize internal consistency. Research conducted with teachers and professors (n = 830) expressing concerns about the innovations of team teaching and instructional modules used the 35-item SoC Questionnaire, and a generalization of the Kuder-

Richardson Formula 20 for dichotomous items was then computed. A subsample (n = 171) of teachers completed the SoC Questionnaire a second time, and test-retest correlations were computed. The internal consistency (alpha coefficients) had an estimated range from .64 to .83 with six of the seven coefficients being above .70.

George (1977) also stated that a series of validity studies were conducted following work by Cronback and Meehl to demonstrate that scores on the questionnaire relate to each other and to other variables. The test studies, validated by a panel, convincingly demonstrated the validity of the Stages of Concern Questionnaire over the two years of longitudinal study (Hall, George, & Rutherford, 1986).

Data Collection Procedure

The total design method for survey research was utilized to collect the data (Dillman, 1978). The following methodology was used:

1. Permission to reproduce the SoC Questionnaire was obtained from the Director of Office Communications of the Southwest Educational Development Laboratory, Austin, Texas (see Appendix B).

2. A cover letter, SoC Questionnaire, demographic data sheet, and a self-addressed stamped envelope (see Appendix C) were mailed in May 1994 to 322 secondary administrators, academic teachers, vocational teachers, and guidance counselors involved in implementing Tech Prep in Virginia.

3.   One week later a postcard (see Appendix D) expressing appreciation for completing the questionnaire and/or to remind the participants to return the information was sent.

4.   Two weeks later, postcards were sent to those individuals who had not responded (see Appendix E).

5.   At week three, a follow up letter and replacement packet was sent only to the non-respondents (see Appendix F).

6.   Each questionnaire was coded with a number to track non-respondents.

Additional methodology included:

1.   The layout of the questionnaire for ease of reading and marking.

2.   Personalization of correspondence by individually signing each letter with blue ink.

3.   The addition of a title under the sender's name and the graduate committee chairperson's signature and title.

4.   Guarantee of confidentiality.

Data Analysis

The SoC questionnaire consisted of 35 statements expressing a certain concern about the innovation. Respondents indicated the degree to which each concern was true of them by marking a Likert-type scale of 0 to 7. High numbers indicated high concern, low numbers indicated low concern, and 0 indicated very low concern or irrelevant items (Hall et al.,

1986). The Number Cruncher Statistical System (NCSS) was used to analyze the data.

Group profiles

The responses to the questionnaire were used for research objective one: to determine the Stages of Concern profiles of administrators, academic teachers, vocational teachers, and guidance counselors involved in implementation of Tech Prep in secondary schools and vocational centers in Virginia. In order to determine these profiles, the mean and range of scores were computed for each stage by each group. Mean scores were calculated by using the raw scores. The raw scores for each Stage of Concern are the sums of the individual responses to the five statements for that stage.

Differences among group profiles

The responses to the questionnaire were used for research objective two: to examine and interpret the differences among group profiles of Stages of Concern of administrators, academic teachers, vocational teachers, and guidance counselors. The seven Stages of Concern are each represented by five statements. The raw score for each stage was tabulated, mean scores calculated and graphed to show the differences in profiles.

Levels of involvement

The responses to the level of involvement question were used to address research objective three: to assess whether the highest Stages of Concern for each group are related to the levels of involvement identified

as participation in teaching activities, workshops, seminars, curriculum writing or steering committees. Cross-tabulations of the groups' highest Stages of Concern with level of involvement were assessed. The Chi-square test of independence statistic was used to assess the extent of the relationship between level of involvement and highest Stages of Concern.

Chapter Summary

This chapter described the research design and outlined the format for data analysis. The survey instrument was based on the Concerns Based Adoption Model using the Stages of Concern questionnaire. The data were collected by mailing a survey to 322 administrators, academic teachers, vocational teachers, and guidance counselors in Virginia who were involved in implementing Tech Prep programs. These programs were in existence for two or more years. Group profiles were determined, examined for differences, and levels of involvement for each group were assessed. Final data analysis and discussions are detailed in Chapter IV.

Chapter 4

Data Analysis and Findings

This chapter describes the findings as a result of the analysis of the returned SoC questionnaires. The following main points are included: (a) a description of the respondents; (b) a description of the Optical Mark Reader Data Procedures; (c) analysis of research objective one; (d) analysis of research objective two; (e) analysis of research objective three; and (f) chapter summary.

Description of the Respondents

The study consisted of 322 individuals in Virginia who were employed at the secondary education level and were involved with the implementation of Tech Prep programs. These programs had been in operation at least two or more years. Secondary school administrators, academic teachers, vocational teachers, and guidance counselors indicated their major job function on the completed questionnaires. Total questionnaires returned were 262 of 322 for a response rate of 81%. Of the 262 questionnaires received, 257 were usable. Table 2 presents the number of questionnaires returned by groups.

Table 2

Questionnaire Response Breakdown

Questionnaires Mailed	322
Questionnaires Returned by Groups	
Administrators	31
Academic Teachers	151
Vocational Teachers	48
Counselors	27
Total	257
Questionnaires -- Non-usable	5
Total Returned	262
Response Rate	81%

Optical Mark Reader Data Procedures

Optical Mark Reader (OMR) processing is a fast and accurate method of entering data. Where responses are machine readable, the data result is 100% accurate. However, due to the inevitability of human error, two separate quality control procedures were followed during each data batch run.

The conditions which will cause a non-machine readable response are:

1. Stray ink or pencil marks that distort the timing marks.
2. Damaged forms that will not pass through the scanner.
3. Responses which are not completely darkened.
4. Creases or folds on a response that interfere with the optical reader.

Quality Control Step 1. Pre-Scan Check. The surveys were sequentially numbered and staples removed prior to scanning. During this process, forms were previewed for potential problems. Any stray pencil marks outside of marking circles were erased and/or any severely damaged forms were replaced with a new form containing the responses exactly as they appeared on the damaged form. For the Tech Prep survey, three forms required this preparation. Survey responses which were checked/circled were darkened by the researcher to a machine readable level. Only one form required this correction.

Quality Control Step 2. Data Review. Each record in the scanned data file was manually compared against the original survey form to determine machine read errors. Approximately 1 out of 25 surveys

contained a non-response due to a read failure. These responses were manually inserted into the data file. Any blank/invalid survey results were from failure by the respondent to grid a response (skipping or write-in responses) or from a respondent gridding two responses to the same question.

Analysis of Research Objective One

Research Objective 1 - To determine the Stages of Concern profile of administrators, academic teachers, vocational teachers, and guidance counselors involved in implementation of Tech Prep in secondary schools and vocational centers in Virginia.

In order to determine these profiles, the range of scores and mean scores were computed for each Stage of Concern by groups. Each of the seven Stages of Concern is represented by five statements. The raw score for each stage is the sum of the responses to the five statements for that stage. Table 3 presents the statements according to each stage and Table 1, presented in Chapter II (page 29), indicates the stage definition.

The following is a discussion of mean score findings, as referred to in Table 4, on the seven Stages of Concern (Awareness Stage, Informational Stage, Personal Stage, Management Stage, Consequence Stage, Collaboration Stage, and Refocusing Stage) by position-- administrators, academic teachers, vocational teachers, and counselors.

Table 3

Statements on the Stages of Concern Questionnaire
Arranged According to Stage

Item Number	Statement
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 this 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.

Table 3 (Continued)

Item Number	Statement
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 non-academic 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 now 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 SoC Questionnaire, (p. 7) by G. E. Hall, A. A. George, and W. L. Rutherford, 1986, Austin, TX: Southwest Educational Development Laboratory.

Table 4				
Summary Profile of Stages of Concern by Position				
Group	n	Mean*	SD	Range
Awareness				
Administrators	31	7.64	4.75	0 - 17
Academic Teachers	151	7.65	4.65	0 - 23
Vocational Teachers	48	8.02	4.54	1 - 20
Counselors	27	8.14	4.82	0 - 22
Informational				
Administrators	31	15.56	9.36	1 - 33
Academic Teachers	151	16.77	7.97	1 - 34
Vocational Teachers	48	17.23	7.72	2 - 31
Counselors	27	13.50	6.62	2 - 24
Personal				
Administrators	31	16.83	10.89	0 - 35
Academic Teachers	151	19.93	8.84	0 - 35
Vocational Teachers	48	21.50	9.31	4 - 35
Counselors	27	15.18	8.25	4 - 35
Management				
Administrators	31	8.51	5.55	0 - 30
Academic Teachers	151	14.71	7.37	0 - 35
Vocational Teachers	48	13.33	6.82	2 - 30
Counselors	27	10.80	7.14	1 - 25
Consequence				
Administrators	31	19.58	5.60	6 - 27
Academic Teachers	151	21.69	7.79	0 - 35
Vocational Teachers	48	21.58	6.86	11 - 35
Counselors	27	19.62	5.52	9 - 29
Collaboration				
Administrators	31	24.03	7.55	9 - 35
Academic Teachers	151	20.56	8.40	0 - 35
Vocational Teachers	48	22.64	8.23	7 - 35
Counselors	27	20.70	7.05	4 - 35
Refocusing				
Administrators	31	11.70	5.57	1 - 23
Academic Teachers	151	14.15	7.07	0 - 33
Vocational Teachers	48	12.39	5.75	3 - 29
Counselors	27	8.85	4.52	2 - 18

*Mean - mean of the total individual raw scores for each stage.

Administrators. Administrators' highest mean score was 24.03 for the Collaboration Stage, as referred to in Table 4. The Collaboration Stage focuses on cooperation and coordination with others regarding use of the innovation--Tech Prep. The second highest mean (19.58) for administrators occurred at the Consequence Stage which concentrates on the impact Tech Prep has with students and evaluation of student outcomes, including performance and competencies. Administrators' next highest mean scores came at the Personal Stage (16.83), Informational Stage (15.56), Refocusing Stage (11.70), Management Stage (8.51), and Awareness Stage (7.64).

Academic Teachers. For academic teachers, the highest mean score was 21.69 for the Consequence Stage. With this mean score being the highest overall for academic teachers, the focus of concern by this group of professionals is on student outcomes. The second highest score was 20.56 for the Collaboration Stage followed by the Personal Stage (19.93). The Informational Stage (16.77), Management Stage (14.71), Refocusing Stage (14.15) and the Awareness Stage (7.65) completed the remaining SoC for academic Teachers.

Vocational Teachers. As noted in Table 4, vocational teachers had the highest mean score for the Collaboration Stage (22.64) followed by the Consequence Stage (21.58). The third highest mean score for vocational teachers was 21.50 for the Personal Stage. The areas of concern for the Personal Stage focus on the individual's role and ability in meeting the demands of Tech Prep. The remaining SoC for vocational teachers were the Informational Stage (17.23), Management Stage (13.33), Refocusing (12.39), and Awareness (8.02), respectively.

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Counselors. The highest mean score for counselors occurred at the Collaboration Stage (20.70) followed by the Consequence Stage (19.62). These mean scores indicated the two relative concerns of this group of professionals as cooperation and coordination with others and student outcomes. The remaining mean scores for the SoC for this group were the Personal (15.18), Informational (13.50), Management (10.80), Refocusing (8.85), and Awareness (8.14).

Analysis of Research Objective Two

Research Objective 2 - To examine and interpret the differences among group profiles of Stages of Concern of administrators, academic teachers, vocational teachers, and guidance counselors.

The mean of the raw scores for each SoC was graphed to illustrate the profile by groups (Figure 1). Also, the following order further illustrates the ranking of the SoC for each participating group:

Administrators	Academic Teachers	Vocational Teachers	Counselors
Collaboration	Consequence	Collaboration	Collaboration
Consequence	Collaboration	Consequence	Consequence
Personal	Personal	Personal	Personal
Informational	Informational	Informational	Informational
Refocusing	Management	Management	Management
Management	Refocusing	Refocusing	Refocusing
Awareness	Awareness	Awareness	Awareness

Figure 1
Comparison of Mean Scores by Stage and Position

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The stage scores are directly related to the stage definitions as previously detailed in Table 1, Chapter II. The relative intensity of concern is indicated by the highest mean score. The higher the mean score, the more intense the concerns are about the innovation at that particular stage (Hall et al., 1986). The four groups surveyed had completed the planning and development process and were involved in implementing Tech Prep programs in Virginia for at least two years or longer.

Administrators, academic teachers, vocational teachers, and counselors converged for the Awareness Stage with the overall lowest mean scores as compared to the seven SoC. The Awareness Stage focuses on little concern or involvement with the innovation. The administrators and academic teachers demonstrated similar levels of concern (7.64 and 7.65 mean scores, respectively) while vocational teachers (8.02) and counselors (8.14) had slightly higher means scores. Counselors and administrators showed the greatest differences between mean scores.

Concerns of the Informational Stage focus on a general awareness of Tech Prep and interest in learning about characteristics, effects, and requirements of use. For the Informational Stage, the four groups-- administrators, academic teachers, vocational teachers, and counselors-- converged with mean scores as the fourth highest overall. Vocational teachers demonstrated the highest mean score (17.23) for this SoC when compared to the other three groups. Counselors (13.50) and vocational teachers had the larger difference in mean scores.

Administrators, academic teachers, vocational teachers and counselors had higher mean scores for the Personal Stage than the previous two SoC. As the third highest SoC for all groups, the Personal Stage

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indicates an individual is uncertain about the demands of Tech Prep, his/her inadequacy to meet those demands, and potential conflicts with personal commitment. Two groups, academic teachers and vocational teachers, demonstrated approximately the same level of concern at the Personal Stage with similar mean scores (19.93 and 21.50, respectively). Again, vocational teachers and counselors (15.18) had the most divergent mean scores.

At the Management Stage, which focuses on the processes and tasks of using the innovation and the best use of information and resources, the administrators diverged from the other three groups, academic teachers (14.71), vocational teachers (13.33), and counselors (10.80),-- with a much lower mean score (8.51). As with the Personal and Informational Stages, the academic teachers and vocational teachers attained approximately the same level of concern at the Management Stage with reasonably close mean scores. The administrators and academic teachers had a vast difference in mean scores for this stage. The mean scores for the Management Stage for the four groups--administrators, academic teachers, vocational teachers, and counselors were lower than the prior two SoC, but higher than the Awareness Stage.

The four groups converged with similar mean scores for the Consequence Stage. This stage focuses on impact of the innovation on students and student outcomes. Academic teachers and vocational teachers continued to group together with similar mean scores (21.69 and 21.58, respectively), while administrators (19.58) and counselors (19.62) also grouped together with similar levels of concern for this stage. For administrators, vocational teachers, and counselors, the Consequence Stage

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was the second highest SoC. Academic teachers (21.69), however, split from the other groups with the Consequence Stage--student outcomes--as their peak score.

Concerns of the Collaboration Stage are coordination and cooperation with others regarding Tech Prep. All groups demonstrated a progressive movement in similar directions, however, at different rates. For the Collaboration Stage, three of the four groups, administrators (24.03), vocational teachers (22.64), and counselors (20.70) had their highest mean score. Only academic teachers had a different SoC for their highest mean score (Consequence Stage) and the Collaboration Stage was the second highest (20.56).

The Refocusing Stage concerns relate to exploration of more benefits from the innovation and ideas about alternatives to the innovation. All groups demonstrated low mean scores for this stage. Three of the four groups--academic teachers, vocational teachers, and counselors--had the Refocusing Stage as their sixth highest score. Administrators reversed the order for the Refocusing and Management Stages as compared to the other three groups.

Vocational teachers indicated their highest SoC (Collaboration and Consequence) were the opposite of the highest SoC for academic teachers (Consequence and Collaboration). Vocational teachers in this study have concerns on coordination and cooperation with others and focusing on student outcomes regarding Tech Prep. Academic teachers' concerns focus on student outcomes and cooperation and coordination with others. Vocational teachers related to academic teachers with the order of the SoC, exhibiting the next highest scores at the Personal Stage (21.50),

Informational Stage (17.23), Management Stage (13.33), Refocusing Stage (12.30), and Awareness Stage (8.02). Counselors followed academic teachers and vocational teachers with the same order of SoC.

Administrators (16.83 and 15.56), academic teachers (19.93 and 16.72), vocational teachers (21.50 and 17.23) and counselors (15.18 and 13.50) had as their third and fourth highest scores the Personal Stage and Informational Stage, respectively. Three of the four groups, academic teachers (14.71), vocational teachers (13.33), and counselors (15.18), had the Management Stage as the fifth highest score. The administrators reversed the order with the Refocusing Stage (11.70) for the fifth highest score and Management Stage (8.51) next to last.

Mean scores seemed to diverge at the Refocusing Stage with lower mean scores than the previous five SoC. Academic teachers exhibited 14.15 as the high mean scores among the four groups, while counselors were lowest at 8.85.

Analysis of Research Objective Three

Research Objective 3 --To assess whether the highest Stages of Concern are related to the levels of involvement identified as participation in teaching activities, workshops, seminars, curriculum writing, or steering committees.

The Chi-square test of independence statistic, at the .05 level of significance, was used to assess possible relationships between level of involvement and highest Stages of Concern. Due to the expected frequencies of some cell sizes being less than five, the no involvement and little involvement levels were collapsed into a low involvement level. If

there were no observed frequencies for the level of involvement and SoC, the column was deleted by the Number Cruncher Statistical Systems computer program.

When a significant relationship was determined, Cramer's V was calculated to determine the strength of the relationship. According to Howell (1992), a range of 0 to +1 is possible. Based upon the researcher's assessment and the possible range of 0 to +1, the strength of the relationship was assessed as very strong, strong, moderate, low, and negligible.

The original design of the study included calculating the Chi-square for each group by the highest SoC mean scores. Since the expected frequencies of some cell sizes were less than five, the stages were consolidated and the Chi-square test of independence was re-calculated. The seven SoC were grouped by another dimension of the CBAM as identified in Chapter II. Three dimensions were reassessed: (1) Self Concerns comprising Stage 0--Awareness, Stage One--Informational, and Stage Two--Personal; (2) Task Concerns comprising only Stage Three--Management; and (3) Impact Concerns comprising Stage Four--Consequence, Stage Five--Collaboration, and Stage Six--Refocusing.

To assess whether the three concerns--Self, Task, and Impact--were related to the level of involvement for each group, the Chi-square test of independence was re-calculated. Also, Cramer's V was re-calculated to determine the strength of the relationship (see Appendix G).

Level of Involvement by Administrators. To determine the administrators' involvement, the Chi-square value of 13.660 was obtained and the probability level was .001. Thus, a relationship existed between the

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level of involvement and the SoC for administrators. The Cramer's V was calculated to determine the strength of the relationship between level of involvement and SoC for administrators. The Cramer's V value was .6638, representing a substantial relationship between the level of involvement and SoC for administrators.

Level of Involvement by Academic Teachers. The data results showed that academic teachers demonstrated a relationship between their level of involvement and SoC. A Chi-square value of 23.281 was obtained with a probability level of .0001. Therefore, a relationship existed between the level of involvement and the Stages of Concern of academic teachers. The Cramer's V value was .2777, representing a low relationship between level of involvement and the SoC of academic teachers.

Level of Involvement by Vocational Teachers. A relationship existed for vocational teachers between level of involvement and the Stages of Concern. The Chi-square value of 17.541 had a probability level of .001. The Cramer's V was .4275, indicating the relationship was moderate.

Level of Involvement by Counselors. The information gathered revealed that the level of involvement for counselors was different than administrators, academic teachers, and vocational teachers. The Chi-square value of 3.111 had a probability level of .539. This indicated that no relationship existed between the level of involvement and the Stages of Concern. Since no relationship existed, Cramer's V was not calculated for counselors.

Chapter Summary

The data analysis was conducted to determine group profiles, interpret differences among groups, and assess the relationship of level of involvement and highest Stages of Concern of administrators, academic teachers, vocational teachers and counselors participating in this study. The four groups had the lowest mean scores at the Awareness Stage with scores increasing for the Informational and Personal Stages. The Personal Stage was the third highest score for all groups. For the Management Stage, however, mean scores dropped again for the four groups. At the following Consequence Stage, academic teachers had the highest mean score for this stage which encompasses student outcomes, including performance and competencies. Three of the four groups--administrators, vocational teachers and counselors--demonstrated their highest SoC at the next stage, Collaboration. This SoC focuses on cooperation and coordination with others.

The findings indicated there is a positive relationship between the level of involvement and the Stages of Concern among three of the four groups. The level of involvement included teaching activities, workshops, seminars, curriculum writing, and steering committees. Three of the four groups--administrators, academic teachers, and vocational teachers-- demonstrated a relationship between involvement and SoC. The Cramer's V was calculated to assess the strength of the relationship. A substantial relationship was shown by administrators while academic teachers and vocational teachers had low and moderate relationships, respectively. The findings for counselors indicated no relationship existed for this group's highest SoC and level of involvement.

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Chapter 5

Summary, Conclusions, and Recommendations

National reports indicate change is needed in the educational arena, including the vocational education community. The review of literature demonstrated evidence of the changing nature of work and questioned whether or not today's schools have the ability to provide the future workforce with the necessary knowledge and skills. The reports state change is imperative. The Tech Prep initiative is an innovative avenue for restructuring vocational education and represents change. Change will encounter resistance, and in order for Tech Prep to be successfully implemented, attention must be given to the practitioners who are implementing the innovation. For classroom innovations to be effective, they must be adopted and used by the practitioners. Often the adoption process involves change on the part of the practitioners. The review of reports on innovation adoption theory indicates processes practitioners go through during innovation adoption. By understanding these processes and the practitioners' concerns, facilitators can provide assistance in implementing an innovation.

The purpose of this study was to determine the Stages of Concern, as described by the Concerns Based Adoption Model, of Tech Prep practitioners in the state of Virginia. The reader is reminded that the Tech Prep programs in this study had been implemented two years. The specific objectives of the study were:

1. To determine the Stages of Concern profiles of administrators, academic teachers, vocational teachers, and guidance counselors involved in implementation of Tech Prep in secondary schools and vocational centers in Virginia.

2. To examine and interpret the differences among group profiles of the Stages of Concern of administrators, academic teachers, vocational teachers, and guidance counselors.

3. To assess whether the highest Stages of Concern for each group are related to the levels of involvement identified as participation in teaching activities, workshops, seminars, curriculum writing or steering committees.

Methodology

In order to address the research objectives of the study in an orderly and logical manner, an extensive review of literature was conducted to develop a theoretical framework in which educational reform issues, vocational education, Tech Prep, educational change and adoption, and the Concerns Based Adoption Model were considered. The literature review helped the author to identify issues related to the implementation of Tech Prep and innovation adoption process. This information provided the basis for identifying the Stages of Concern of practitioners as related to the adoption of curriculum innovations.

The Stages of Concern (SoC) questionnaire of the Concerns-Based Adoption Model was used as the instrument of the research study. The SoC describes the feelings, perceptions and attitudes of individuals as they

consider, approach, and implement an innovation. The SoC questionnaire evolved from Hall's (1986) research which hypothesized that individuals entertain seven different stages of concern as they accept an innovation.

A master list of Tech Prep projects was obtained from the State Director for Tech Prep Programs. Determination of which consortium directors to contact for level of implementation information was made using the Tech Prep development/implementation grant date. The level of implementation identified those programs which had been implemented for at least two years. Administrators, academic teachers, vocational teachers, and guidance counselors involved with implementation of Tech Prep programs were identified. From this information, a population consisting of 322 individuals was surveyed.

Using the methodology described by Dillman (1978) for survey research, a response rate of 81% was obtained. There was no methodology for sampling the non-respondents. The data were analyzed with descriptive statistics, Chi-square, and Cramer's V. An a-priori alpha level of .05 was used for test significance.

<u>Summary of Findings: Research Objectives One and Two</u>

Research Objective 1 - To determine the Stages of Concern profile of administrators, academic teachers, vocational teachers, and guidance counselors involved in implementation of Tech Prep in secondary schools and vocational centers in Virginia.

Research Objective 2 - To examine and interpret the differences among group profiles of Stages of Concern of administrators, academic teachers, vocational teachers, and guidance counselors.

The following is a rank order by highest to lowest mean scores for the Stages of Concern for each participating group:

<u>Administrators</u>	<u>Academic Teachers</u>	<u>Vocational Teachers</u>	<u>Counselors</u>
Collaboration	Consequence	Collaboration	Collaboration
Consequence	Collaboration	Consequence	Consequence
Personal	Personal	Personal	Personal
Informational	Informational	Informational	Informational
Refocusing	Management	Management	Management
Management	Refocusing	Refocusing	Refocusing
Awareness	Awareness	Awareness	Awareness

While the Stages of Concern are defined in Chapter II, the following is a brief summary of each SoC as described by Rogers (1992).

Awareness--Little concern about or involvement with the innovation.

Informational--A general awareness of the innovation and interested in learning more about it.

Personal--Individual is uncertain about the demands of the innovation, his/her inadequacy to meet those demands, and the role of the innovation.

Management--Attention is focused on the processes and tasks of using the innovation and best use of resources.

Consequence--Attention is focused on the impact of the innovation on students in the individual's sphere of influence.

Collaboration--Focus is on coordination and cooperation with others regarding use of the innovation.

Refocusing--Focus is on exploration of more universal benefits from the innovation. The individual has definite ideas about alternatives to the innovation. (p. 50)

Four of the seven highest SoC mean scores for administrators, academic teachers, vocational teachers, and counselors were the Collaboration Stage, Consequence Stage, Personal Stage, and Informational Stage. Personal Stage scores were relatively high compared to the two highest SoC--Collaboration and Consequence Stages.

The differences among group profiles are presented by combinations of administrators, academic teachers, vocational teachers, and counselors. The profiles are based on the rank order of mean scores by stage for each group.

Administrators and Vocational Teachers. Administrators and vocational teachers had the three highest SoC for the Collaboration Stage, Consequence Stage, and Personal Stage, respectively. These groups of professionals had the same order of SoC for the remaining stages except reversed the order for Refocusing and Management Stages.

Administrators and Academic Teachers. Academic teachers had the highest SoC for the Consequence Stage and second highest for the Collaboration Stage, which were the opposite of the administrators. The

third highest stage for both groups was the Personal Stage. As with vocational teachers, academic teachers also reversed the order of Refocusing and Management Stages with the administrators.

Administrators and Counselors. These groups demonstrated the same order of SoC with the three highest mean scores for the Collaboration Stage, Consequence Stage, and Personal Stage, respectively. Administrators and Counselors also reversed the order of the Refocusing and Management Stages.

Vocational Teachers and Academic Teachers. These groups diverged at the highest and second highest SoC. Vocational teachers' highest mean score was the Collaboration Stage and academic teachers' highest mean score was the Consequence Stage. The second highest score for vocational teachers was the Consequence Stage, while the second highest mean score for academic teachers was the Collaboration Stage. Vocational teachers and academic teachers were consistent with the administrators and counselors and had the third highest mean score for the Personal Stage. For the remainder of the stages, both groups had the same order of SoC with Informational, Management, Refocusing, and Awareness.

Vocational Teachers and Counselors. Vocational teachers and counselors in this study had the same order for the Stages of Concerns, with Collaboration, Consequence, and Personal Stages having the three highest mean scores, respectively. Even though the groups have the same highest SoC, the mean scores indicate different levels of concern for each stage.

Academic Teachers and Counselors. Academic teachers and counselors differed for the highest SoC. Academic teachers were the highest for the Consequence Stage and counselors were highest for the Collaboration Stage. These groups remained consistent with administrators and vocational teachers with the Personal Stage as the third highest score. The remaining stages for academic teachers and counselors were in the same order of concern.

Summary of Findings: Research Objective Three

Research Objective 3 - To assess whether the highest Stages of Concern for each group are related to the levels of involvement identified as participation in teaching activities, workshops, seminars, curriculum writing, or steering committees.

Administrators. It was determined that the SoC for administrators and the level of involvement were related. With a probability level of .0011, the level of involvement and SoC were significant at the alpha level of .05. Cramer's V indicated that the strength of the relationship was substantial.

Academic Teachers. Academic teachers demonstrated a relationship between their level of involvement and SoC with a probability level of .0001. The strength of the relationship was confirmed by Cramer's V as low.

Vocational Teachers. Vocational teachers indicated a relationship between the level of involvement and the highest SoC with a probability

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level of .0015. Cramer's V indicated a moderate relationship for vocational teachers.

Counselors. Counselors indicated no relationship existed between the level of involvement and SoC.

Conclusions

Based on the findings of this study of practitioners involved in implementation of Tech Prep for at least two years, the following conclusions were drawn.

Indicative of the findings of research objectives one and two and based on the theory of the Concerns Based Adoption Model and the Stages of Concern, it was concluded that practitioners involved with Tech Prep programs for at least two years in Virginia are becoming experienced users of the Tech Prep concept. The statistical evidence consisting of lower mean scores for the Awareness, Informational, Personal Stages (self concerns), and the Management Stage (task concerns), indicate practitioners have progressed beyond the beginning innovation adoption stages.

The research findings in the study indicate that practitioners--administrators, academic teachers, vocational teachers, and counselors--have similar Stages of Concern about the implementation of Tech Prep. These similarities evolved around the Consequence (student outcomes) and Collaboration Stages (coordination and cooperation), as these were either highest or second highest mean scores for all groups. It is concluded that staff development should relate to strategies necessary to improve student

outcomes, cooperation and coordination with others, and demands of the innovation .

Based on the findings of research objective three that the level of involvement by administrators, academic teachers, and vocational teachers during implementation of Tech Prep was related to the Stages of Concern, it is concluded that the more involved practitioners are with implementation of Tech Prep, the higher their Stages of Concern. There was not a significant relationship among counselors and level of involvement.

Discussion

The focus of change has most often been on a large-scale, system-wide level instead of focusing on the individuals who make the change. Change at the system-wide level is important, but difficult to attain unless the individual members (or users) are involved. As individuals move from unawareness and nonuse of an innovation to highly sophisticated use, their concerns move through identifiable stages also. There is a developmental progression in the types of concerns that practitioners have about using the innovation (Hall, 1975).

This study supported the Concerns Based Adoption Model concept that focus should be directed to the practitioners of an innovation, their concerns, feelings, attitudes and perceptions during the implementation process. By addressing these concerns and involving practitioners in the process, change can be more successful and educational innovations adopted and implemented in the classroom.

The Tech Prep programs surveyed had been implemented for at least two years. Low mean scores were reported for the Awareness and Informational Stages which indicated the practitioners had accepted Tech Prep and had little concern about general information on the concept of Tech Prep. This supports the findings of Bradley (1992) who determined that teachers need from twelve to eighteen months of using an innovation to become users of an innovation. Hall and Hord (1987) reported that some innovation adoptions will require three to five years.

The implementation of Tech Prep programs in Virginia has required major changes for the practitioners--administrators, academic teachers, vocational teachers, and guidance counselors. When faced with an innovation, individuals go through Stages of Concern about the innovation (Rogers, 1992). By identifying the SoC, assessments can be made, indicating where individual members of an organization are in relation to the adoption of various innovations (Hall, et al., 1986). The analysis of mean scores showed that all groups had the highest and second highest mean score at the Collaboration and/or Consequence Stages. By using the SoC as a diagnostic tool (Broyles & Tillman, 1985; Hall, et al., 1986; Cross, 1991), assessment would indicate that intervention strategies and staff development concerning cooperation and coordination are necessary. Additional staff development activities should include student outcomes and evaluation of student outcomes, including competencies.

A component of Tech Prep is integration of vocational and academic subjects (Kolde, 1991). Traditionally, there have been barriers between vocational teachers and academic teachers. One reason for this is that

Virginia has many school divisions which operate centrally located vocational-technical centers that serve more than one high school. The vocational teachers and academic teachers have limited opportunity to coordinate curriculum as they are housed at different locations. To accomplish the integration of vocational and academic studies, it is necessary to provide an avenue for vocational teachers and academic teachers to develop integration linkages.

It was determined that a relationship among level of involvement and highest SoC existed between three of the four groups--administrators, academic teachers, and vocational teachers, while counselors showed no significant relationship. The findings of Logan (1993) and Savage (1992) indicated a need for professional development activities as practitioners become involved with the innovation. Therefore, it is important that staff development activities become a crucial component to assist practitioners with implementation of Tech Prep.

Recommendations

This study focused on educational reform and Tech Prep, innovation adoption, the Concerns Based Adoption Model and the Stages of Concern dimension of CBAM. The Tech Prep programs identified in this study have been implemented for at least two years. If innovation adoption is to be effective, it is imperative consideration be given to the practitioners' attitudes, concerns, and feelings. The following recommendations are made.

This study should be replicated with larger sample sizes and the questionnaires submitted at the beginning of the innovation adoption and at designated periods after the implementation process. Such longitudinal studies may determine linkages between time, staff development activities, and the SoC of practitioners.

Attention should continue to focus on concerns, attitudes, and expectations of practitioners as they proceed with the continuation of Tech Prep in Virginia and other states. Practitioners may have multiple concerns about an innovation and these concerns change as they move through the adoption process.

The role of practitioners in an innovation adoption is important to the successful implementation of the innovation. The practitioners should be the focus of attention in implementing a new program and/or curriculum innovation. Therefore, it is recommended that attention include involvement in implementation activities, staff development, seminars, workshops, and others.

It is further recommended that pre-service and in-service staff development should focus on collaborative techniques and group dynamics to foster and provide skills for cooperation and coordination of Tech Prep. Since integration of vocational and academic studies are an integral part of the Tech Prep concept, emphasis should include collaborative activities among all groups. Because administrators, academic teachers, vocational teachers, and counselors had similar scores at the Consequence and Collaboration Stages, more than one Stage of Concern existed. By this occurrence, concerns are not separated out one stage at a time. Thus,

concerns could cluster together indicating multiple concerns about the innovation. For the practitioners in this study, staff development activities should focus on group dynamics and student skills and competencies. These concerns require additional support and encouragement from administrators, particularly since they are in leadership roles.

Additional research should be conducted to determine the extent of cooperation and coordination activities among practitioners of Tech Prep. Emphasis should be placed on integration of vocational and academic studies as it is a crucial component of the Tech Prep initiative. In order to prepare students for the competitive workforce, a transfer of knowledge from the classroom to the workplace is imperative.

Focus by teacher educators, the Virginia Department of Education staff, and vocational-technical and academic personnel in school divisions should concentrate on collaborative techniques and student outcomes. It is recommended that policy be developed to include extensive professional development and increased dialogue among practitioners as they implement Tech Prep programs.

Chapter Summary

The Tech Prep initiative is an innovative avenue for restructuring education and represents change. For classroom innovations to be effective, they must be adopted and used by the practitioners. The group of professionals involved in this study indicated they are becoming experienced users of the Tech Prep concept. The SoC, as indicated by groups, focused on coordination and cooperation with others and student

outcomes. Thus, staff development activities should concentrate on these areas. Level of involvement for practitioners is related to the SoC. The role of the practitioner in innovation adoption is important to the successful implementation of the innovation.

Future innovation-oriented studies should consider the practitioners' role of innovation adoption. Further research should be conducted to understand practitioners' concerns when implementing educational innovation and reform to determine and understand differences between groups of practitioners. By working together, educational leaders and practitioners can provide more productive and meaningful educational experiences for all members of our society. Such research is useful when planning and implementing policy, requesting grant funding, and instituting educational innovations and initiatives.

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APPENDICES

APPENDIX A
QUESTIONNAIRE

INSTRUCTIONS

CONCERNS QUESTIONNAIRE

Name (Optional)_____

PLEASE USE A NO. 2 LEAD PENCIL, MAKE ALL MARKS COMPLETELY DARK, CHOOSE ONLY ONE RESPONSE PER QUESTION.

The purpose of this questionnaire is to determine what people who are using, or thinking about using, various programs or practices are concerned about at different times during the innovation adoption process. 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 "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 of me at this time.   0 1 2 3 4 5 6 7

This statement seems irrelevant
to me.   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 **Tech Prep.** We do not hold to any one definition of this innovation, so please think of it in terms of **your own perception of what it involves.** Please respond to each item in terms of **your present concerns** about your involvement or potential involvement with Tech Prep.

Your response is crucial to this study! Thank you for taking time to complete this task and please return the questionnaire in the postage-paid envelope by **May 21.**

Stages of Concern in Implementing Tech Prep Programs

Brenda D. Long, Supervisor of Vocational Education
Tazewell County Schools
209 West Fincastle Turnpike
Tazewell, VA 24651 Phone (703) 988-5511

READ Instructions:

1. **Use a number two pencil.**
2. Make all marks completely **dark.**
3. Choose **only** one response.

:tion I Please respond to the following statements as they relate to Tech Prep.

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

	0	1	2	3	4	5	6	7
I am concerned about students' attitudes toward Tech Prep.	○	○	○	○	○	○	○	○
I now know of some other approaches that might work better than Tech Prep.	○	○	○	○	○	○	○	○
I don't even know what Tech Prep is.	○	○	○	○	○	○	○	○
I am concerned about not having enough time to organize myself each day in relation to Tech Prep.	○	○	○	○	○	○	○	○
I would like to help other faculty in their use of Tech Prep.	○	○	○	○	○	○	○	○
I have very limited knowledge about Tech Prep.	○	○	○	○	○	○	○	○
I would like to know the effect of reorganization on my professional status.	○	○	○	○	○	○	○	○
I am concerned about conflict between my interests and my responsibilities.	○	○	○	○	○	○	○	○
I am concerned about revising my use of Tech Prep.	○	○	○	○	○	○	○	○
I would like to develop working relationships with both our faculty and outside faculty using Tech Prep.	○	○	○	○	○	○	○	○
I am concerned about how Tech Prep affects students.	○	○	○	○	○	○	○	○
I am not concerned about Tech Prep .	○	○	○	○	○	○	○	○
I would like to know who will make the decisions in the new system.	○	○	○	○	○	○	○	○
I would like to discuss the possibility of using Tech Prep.	○	○	○	○	○	○	○	○
I would like to know what resources are available if we decide to adopt Tech Prep.	○	○	○	○	○	○	○	○
I am concerned about my inability to manage all that Tech Prep requires.	○	○	○	○	○	○	○	○
I would like to know how my teaching or administration is supposed to change.	○	○	○	○	○	○	○	○
I would like to familiarize other departments or persons with the progress of this new approach.	○	○	○	○	○	○	○	○

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

	0	1	2	3	4	5	6	7
I am concerned about evaluating my impact on students in relation to Tech Prep.	○	○	○	○	○	○	○	○
I would like to revise Tech Prep's instructional approach.	○	○	○	○	○	○	○	○
I am completely occupied with other things besides Tech Prep.	○	○	○	○	○	○	○	○
I would like to modify our use of Tech Prep based on the experiences of our students.	○	○	○	○	○	○	○	○
Although I don't know about Tech Prep, I am concerned about things in the area.	○	○	○	○	○	○	○	○
I would like to excite my students about their part in Tech Prep.	○	○	○	○	○	○	○	○
I am concerned about time spent working with nonacademic problems related to Tech Prep.	○	○	○	○	○	○	○	○
I would like to know what the use of Tech Prep will require in the immediate future.	○	○	○	○	○	○	○	○
I would like to coordinate my effort with others to maximize the effects of Tech Prep.	○	○	○	○	○	○	○	○
I would like to have more information on time and energy commitments required by Tech Prep.	○	○	○	○	○	○	○	○
I would like to know what other faculty are doing in this area.	○	○	○	○	○	○	○	○
At this time, I am not interested in learning about Tech Prep.	○	○	○	○	○	○	○	○
I would like to determine how to supplement, enhance or replace Tech Prep.	○	○	○	○	○	○	○	○
I would like to use feedback from students to change the program.	○	○	○	○	○	○	○	○
I would like to know how my role will change when I am using Tech Prep.	○	○	○	○	○	○	○	○
Coordination of tasks and people working with Tech Prep is taking too much of my time.	○	○	○	○	○	○	○	○
I would like to know how Tech Prep is better than what we have now.	○	○	○	○	○	○	○	○

:ion II   Demographics

Please indicate the response which best describes your <u>major</u> job function.

○ Administrator   ○ Academic Teacher   ○ Vocational Teacher   ○ Counselor

Please rate your perceived level of involvement in such Tech Prep activities as teaching, workshops, courses, seminars, curriculum writing, Steering Committee, etc.

○ No Involvement   ○ Little Involved   ○ Moderately Involved   ○ Highly Involved

. Please briefly describe your involvement in various Tech Prep activities.

APPENDIX B
PERMISSION TO USE QUESTIONNAIRE

432 Valley Drive
Richlands, VA   24641
March 7, 1994

Shirley Hord
Senior Research Associate
Office Communications
Southwest Educational
   Development Laboratory
211 East Seventh Street
Austin, TX   78701
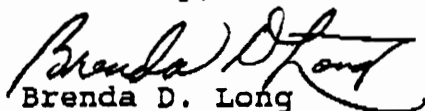
Dear Dr. Hord:

I am an Ed.D. student at Virginia Polytechnic Institute and
State University working on a dissertation pertaining to
Stages of Concerns of Implementing Tech Prep Programs.   The
dissertation will concern innovation, how innovation is being
adopted, and at what stage of concern the adoption of the
innovation is currently being perceived in the school system.
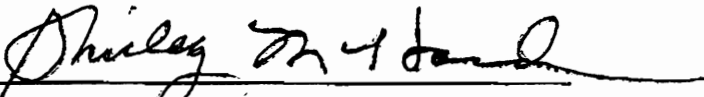
I am requesting permission to reproduce the Stages of Concern
Questionnaire as the measurement instrument in my
dissertation.   At this time, a random sample of educators in
Virginia will be selected for this study.   Proper credit for
use and reproduction of the instrument will be given to SEDL.

Thank you for your cooperation and assistance.

Sincerely,

Brenda D. Long

Approved _____

Date Approved _3/9/94_____

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APPENDIX C
INITIAL LETTER

Virginia Tech

VIRGINIA POLYTECHNIC INSTITUTE
AND STATE UNIVERSITY

Division of Vocational and Technical Education

College of Education
Blacksburg, Virginia 24061-0254
Fax: (703) 231-3292

May 12, 1994

&NAME&
&SCHOOL&
&ADDRESS&
&TOWN&, &STATE&

Dear &SAL&:

The purpose of this letter is to seek your assistance in a study of Tech Prep programs in Virginia. We are working on a project to determine the concerns of vocational teachers, academic teachers, guidance counselors, and administrators in implementing Tech Prep programs.

Realizing your time is valuable, the enclosed questionnaire will take approximately 10 minutes to complete. Please return the completed questionnaire in the enclosed self-addressed, stamped envelope. A Virginia Tech pencil is enclosed for your use.

Answers will remain confidential as we are interested in the aggregate data only and not individual responses. The questionnaire has been numbered not to track responses, but rather to allow us to know who has returned the questionnaire so we do not contact you or your school unnecessarily. Since a high return rate is essential and your response is critical, follow-up request will be done for non-respondents. Please return this questionnaire by May 21.

Your cooperation and assistance are greatly appreciated, and if you have any questions, please contact me at 703-988-5511. Results of the study will be available by late fall and if you would like a copy of the executive summary, please complete and return the blue form.

Sincerely,

Brenda D. Long   James Hoerner
Supervisor, Vocational Education   Professor
Tazewell County Schools   Division of Vocational
and Graduate Student   & Technical Education

A Land-Grant University–The Commonwealth Is Our Campus
An Equal Opportunity / Affirmative Action Institution

APPENDIX D
POST CARD -- FIRST FOLLOW UP

May 17, 1994

Dear Educator,

Last week you received a survey from Virginia Tech regarding a study of Tech Prep programs in Virginia. If you have returned the survey, thank you for your cooperation. If you have not, please take a few minutes to complete and return your survey. It is very important to have your input on this critical issue. Your responses are strictly confidential.

If you have questions about the study or completing the survey, please call me at 703-988-5511.

Thank you,

Brenda D. Long, Supervisor
Vocational Education
Tazewell County Schools

APPENDIX E
SECOND POST CARD -- NON-RESPONDENTS

May 27, 1994

Dear Educator,

About two weeks ago you received a survey from Virginia Tech regarding a study of Tech Prep programs in Virginia. As of today, we have not received your response. It is very important to us to have your input on this critical issue. Please take a moment to complete and return your survey at your earliest convenience. Your responses are strictly confidential.

If you have questions about the study or completing the survey, please call me at 703-988-5511.

Thank you,

Brenda D. Long, Supervisor
Vocational Education
Tazewell County Schools

APPENDIX F
SECOND FOLLOW UP LETTER

Virginia Tech

VIRGINIA POLYTECHNIC INSTITUTE
AND STATE UNIVERSITY

Division of Vocational and Technical Education

College of Education
Blacksburg, Virginia 24061-0254
Fax: (703) 231-3292

June 7, 1994

&NAME&
&SCHOOL&
&ADDRESS&
&TOWN& &STATE&

Dear &SAL&:

Several weeks ago you received a survey regarding a study we are conducting on Tech Prep programs in Virginia. As of today, we have not received your response. We need to know what you think about Tech Prep programs. If you have returned your survey, thank you. If you have not, please take a few minutes to complete the enclosed survey and return it in the postage paid envelope. Rest assured that your responses are completely confidential.

If you have questions, regarding this study or completing the survey, please feel free to call at 703-988-5511. Thank you for your cooperation!

Sincerely,

Brenda D. Long   James Hoerner
Supervisor, Vocational Education   Professor
Tazewell County Schools   Division of Vocational
                                        & Technical Education

APPENDIX G
CHI-SQUARE TEST OF INDEPENDENCE
SELF, TASK, IMPACT CONCERNS

Cross Tabulation Results

Administrators

Level of Involvement	Dimension		
	Self	Impact	Total
low	8.0	1.0	9.0
	8.9	11.1	100.0
	61.5	5.6	29.0
	25.8	3.2	29.0
	4.7	3.4	8.1
moderate	5.0	10.0	15.0
	33.3	66.7	100.0
	38.5	55.6	48.4
	16.1	32.3	48.4
	0.3	0.2	0.5
high	0.0	7.0	7.0
	0.0	100.0	100.0
	0.0	38.9	22.6
	0.0	22.6	22.6
	2.9	2.1	5.1
Total	13.0	18.0	31.0
	41.9	58.1	100.0
	100.0	100.0	100.0
	41.9	58.1	100.0
	7.9	5.7	13.7

Chi-Square Statistics

Administrators

Level of Involvement Versus DIMENSION

Chi-Square with 2 degrees of freedom	13.6600
Probability Level	0.0011
Cramer's V	0.6638

Cross Tabulation Results

Academic Teachers

Level of
Involvement

Dimension

	Self	Task	Impact	Total
low	37.0	2.0	18.0	57.0
	64.9	3.5	31.6	100.0
	5.7	25.0	22.5	37.7
	24.5	1.3	11.9	37.7
	7.3	0.3	4.9	12.6
moderate	20.0	3.0	35.0	58.0
	34.5	5.2	60.3	100.0
	31.7	37.5	43.8	38.4
	13.2	2.0	23.2	38.4
	0.7	0.0	0.6	1.3
high	6.0	3.0	27.0	36.0
	16.7	8.3	75.0	100.0
	9.5	37.5	33.8	23.8
	4.0	2.0	17.9	23.8
	5.4	0.6	3.3	9.3
Total	63.0	8.0	80.0	151.0
	41.7	5.3	53.0	100.0
	100.0	100.0	100.0	100.0
	41.7	5.3	53.0	100.0
	13.5	1.0	8.8	23.3

Chi-Square Statistics

Academic Teachers

Level of Involvement Versus Dimension

Chi-Square with 4 degrees of freedom	23.2808
Probability Level	0.0001
Cramer's V	0.2776

Cross Tabulation Results

Vocational Teachers

Level of
Involvement

Dimension

	Self	Task	Impact	Total
low	9.9	1.0	0.0	10.0
	9.0	10.0	0.0	100.0
	3.1	50.0	0.0	20.8
	1.8	2.1	0.0	20.8
	3.7	0.8	4.8	9.3
moderate	12.0	0.0	11.0	23.0
	52.2	0.0	47.8	100.0
	52.2	0.0	47.8	47.9
	25.0	0.0	22.9	47.9
	0.1	1.0	0.0	1.0
high	2.0	1.0	12.0	15.0
	13.3	6.7	80.0	100.0
	8.7	50.0	5.2	31.3
	4.2	2.1	25.0	31.3
	3.7	0.2	3.2	7.2
Total	23.0	2.0	23.0	48.0
	47.9	4.2	47.9	100.0
	100.0	100.0	100.0	100.0
	47.9	4.2	47.9	100.0
	7.5	2.0	8.0	17.5

Chi-Square Statistics

Vocational Teachers

Level of Involvement Versus DIMENSION

Chi-Square with 4 degrees of freedom	17.5410
Probability Level	0.0015
Cramer's V	0.4275

Cross Tabulation Results

Counselors

Level of
Involvement   Dimension

	Self	Task	Impact	Total
low	2.0	0.0	3.0	5.0
	40.0	0.0	60.0	100.0
	28.6	0.0	17.6	18.5
	7.4	100.0	11.1	18.5
	0.4	0.6	0.0	0.9
moderate	3.0	3.0	9.0	15.0
	2.0	20.0	60.0	100.0
	42.9	100.0	52.9	55.6
	11.1	11.1	33.3	55.6
	0.2	1.1	0.0	1.3
high	2.0	0.0	5.0	7.0
	28.6	0.0	71.4	100.0
	28.6	0.0	29.4	25.9
	7.4	0.0	18.5	25.9
	0.0	0.8	0.1	0.9
Total	7.0	3.0	17.0	27.0
	25.9	11.1	63.0	100.0
	100.0	100.0	100.0	100.0
	25.9	11.1	63.0	100.0
	0.6	2.4	0.1	3.1

Chi-Square Statistics

Counselors

Level of Involvement Versus DIMENSION

Chi-Square with 4 degrees of freedom	3.1116
Probability Level	0.5393
Phi	0.3395

VITA

Brenda Yvonne Dingus Long was born on August 9, 1951 in Clintwood, Virginia. Brenda and her sister, Nancy, and brother, Gary, lived with their parents, Nina and Paul Dingus, on a small rural farm.

Brenda's interest in home economics developed through the local high school education program. She became involved in the local FHA Chapter serving as local and district president and was awarded several leadership and citizenship awards. Through the encouragement of her home economics teacher and other high school faculty, Brenda decided to pursue a degree in vocational home economics. After completing two years at Southwest Virginia Community College, Brenda transferred to Virginia Tech and completed a Bachelor of Science Degree in Management, Housing, and Family Development with secondary vocational home economics education endorsement.

Upon graduation from Virginia Tech, Brenda worked three years with the Virginia Cooperative Extension Service in Bland and Buchanan Counties. During this time, the Buchanan County staff was awarded the Outstanding Unit Staff Award. At this time, Brenda completed requirements for a Master of Science Degree in Education also from Virginia Tech.

According to Brenda, she had no intention of entering education; however, in 1976 she became employed by the Tazewell County School system as department chair and teacher at Richlands Middle School Home Economics Department, a position she maintained until 1992. During this tenure, Brenda taught 7th and 8th grades Life Management Skills classes,

adult education classes, and one year as a part-time home economics teacher at Richlands High School.

Realizing that vocational education traveled many avenues, Brenda became actively involved in state, regional, and national vocational education associations and vocational home economics teachers associations. Coming through the leadership ranks, she held many offices and committee appointments. Through these efforts, Brenda began to broaden her philosophy of vocational-technical education, as well as her career goals. In 1990, she completed the requirements for the Certificate of Advanced Graduate Studies (CAGS) in Vocational-Technical Administration with secondary education administration endorsement.

To gain administrative experience, Brenda accepted the position as a high school assistant principal in 1992. In 1993, she was appointed to her present position as Supervisor of Vocational Education for Tazewell County Schools. Also, at that time, Brenda decided to pursue an Ed.D in Vocational-Technical Education from Virginia Tech.

Brenda holds membership in the Virginia Vocational Association, Virginia Home Economics Teachers Association, Virginia Association of Vocational Administrators, American Vocational Association, National Council of Local Administrators, Association of Supervision and Curriculum Development, Omicron Tau Theta, and Phi Delta Kappa.

Brenda and her husband, Howard, have two sons, Howie and Benjamin.

Brenda Dingus Long