

TRADE AND INDUSTRIAL EDUCATION:
A CLIMATE FOR REFORM

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by

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Teaching and Learning

(ABSTRACT)

The purpose of this study was to assess the climate for the adoption of a proposed reform model for secondary trade and industrial (T&I) education in Virginia. Vocational administrators and T&I instructors beliefs about the extent to which the adoption of the proposed model would precipitate selected outcomes were measured by using an instrument developed specifically for this study.

The population of this study included two sub-groups: secondary vocational administrators and secondary T&I instructors. Equal representation from the groups could not be guaranteed as a result of the sampling procedures employed for this study. Questionnaires were mailed to 145 vocational administrators identified from the list provided by the Virginia Department of Education. Responses were received from 120 administrators (83%). Two-hundred-ninety-five questionnaires were distributed to T&I instructors. Responses were received from 129 instructors (43.7%).

The study examined the climate for change in secondary T&I education programs in Virginia. It examined whether vocational administrators and T&I instructors believe that implementation of the proposed model would be likely to increase access to, the flexibility of, or the cost effectiveness of T&I programs. The extent to which administrators and instructors believed that increasing access, flexibility, and cost effectiveness would affect selected outcomes was also investigated. Finally, the study examined the degree of personal importance administrators and instructors placed on selected outcomes.

There was a similar belief between both groups that implementation of the proposed T&I reform model would result in increased access, flexibility, and cost effectiveness. Both groups were optimistic that access and flexibility would be increased with slightly less optimism

being shown for increased cost effectiveness. Also, both groups were optimistic that outcomes dealing with “quality” issues (improve quality of programs and increase student quality) would be affected positively as a result of model implementation and that the image of T&I programs would also be improved by implementation of the proposed T&I reform model.

In general, administrators believed some reform outcomes less likely to be affected by increased access, flexibility, or cost effectiveness than others. Specifically, they believed it less likely that resources will increase or that the number of qualified instructors will increase merely as a result of implementation of the proposed model.

Instructors’ responses were optimistic for all outcomes except the extent that increased cost effectiveness would achieve selected outcomes. Instructors, like administrators, did not show strong support concerning the likelihood of model implementation increasing cost effectiveness.

As a whole, both sub-groups appeared to be receptive to change. Although the proposed trade and industrial reform model may not in its’ current form accomplish the needed changes, administrators and instructors would seem to be accepting of attempts to reform secondary trade and industrial education in Virginia.

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Chapter One

Introduction

Just as the last century's transformation from an agrarian society to an industrial one made the one-room schoolhouse obsolete, replacing it with today's school bureaucracies, so this century's movement into a high-technology information age demands a new kind of education and new forms of school organization (Darling-Hammond, 1993, p. 754).

As Darling-Hammond indicates, schools are and will be forced to change or reform to address the education and employment needs of today's society. Changes in technology have created a concept of work much different than just a few short years ago. Phelps and Johnson (1991) indicated that the economic, technological, demographic, and social changes facing the education and employment communities between now and the year 2001 are both enormous and complex. It is not enough today to be well versed in one occupational or technical area, the employee of the future will be expected to contribute in a number of new and innovative ways. Bracey (1994) concluded that "while education is at best tenuously linked to the well-being of the nation, it has become even more important to the well-being of the individual" (p. 117). As a result, schools today must be willing and able to make the changes necessary to meet the needs of the next millennium.

What does this so called reform or change mean? In this study, reform will be used interchangeably with change. Education reform or change is the process a local school system undertakes to improve the way they educate. This frequently includes reforms in scheduling, curriculum development, decision making, and staff development.

There are two basic types of school reform. These are reforms in what schools do (their mission) and reforms in how schools do what they do (their delivery systems). Vocational education in general and trade and industrial education specifically, have a very timely opportunity to plan their own future. Both can be reactive and wait for reform to occur or both can be proactive and plan for reform. As O'Reilly and Asche (1992) concluded, the question is whether we want to be reformers or to be reformed by others.

Trade and industrial education (T&I) is in a difficult position. On one hand T&I is charged with meeting the needs of students and on the other hand T&I is charged with supplying a qualified workforce for business and industry. O'Reilly and Asche (1992) found

that trade and industrial education is caught between these often conflicting purposes -- the desire to serve the individual needs and aspirations of students while being accountable for the performance of those students in a rapidly changing labor market and society. How will T&I education professionals deal with this challenge? The answer must be to reform what is presently occurring. As Darling-Hammond (1993) concluded, "School reform efforts must focus on building the capacity of schools and teachers to undertake tasks they have never before been called upon to accomplish. Schools and teachers must work to ensure that all students learn to think critically, to invent, to produce, and to solve problems" (p.758).

Reform must be managed, directed, and purposeful. It must be well planned, clearly defined, and quantifiable. This however is not always the case for public schools. Wirth (1989) wrote, "Change is present in the great educational challenges we face at the close of this century" (p. 8). Asche (1989) concluded that the existence and nature of vocational education at the individual school level may depend heavily on the ability of vocational teachers to assume important roles in both the general education of students and in school governance.

Vocational education is delivered at both the secondary and postsecondary levels with a far larger portion occurring at the secondary level. Plawin (1994) reported that, "Most secondary vocational education occurs in vocational programs in comprehensive high schools" (p. 43). Comprehensive high schools are what could loosely be considered typical high schools. These schools are comprehensive in nature because they provide both vocational and academic course work. Comprehensive high schools serve the largest percentage of students in American society. Plawin (1995) reported that 79 percent of vocational education occurred in these comprehensive high schools (p. 26). Approximately 16 percent of all high school credits students earned in 1993 were in vocational education (Boesel, Hudson, Deich, & Masten, 1994, p. 2).

Enrollments in secondary vocational education are declining. Some experts have argued that increased academic requirements have caused vocational enrollments to decline. A National Center for Research in Vocational Education (NCRVE) study, *US Enrollment Patterns in Secondary Vocational Education: A Status Report (1983-1990)* (Strickland, Elson, & Frantz, 1992), examined vocational enrollments during the school years from 1982-83 to 1989-90. Strickland et al. found that 19 states had increasing secondary vocational

enrollments and 31 states had decreasing secondary vocational enrollments. Of the 31 states with decreasing secondary vocational enrollments, 22 states experienced greater decreases in secondary vocational enrollments than the overall decreases in national secondary school enrollment. These decreases ranged from a high of 9.9 % (Massachusetts) to a low of .8 % (Nebraska).

The NCRVE study also investigated the relationship between enrollment trends and state educational policy. The NCRVE study identified several common policy activities or practices for states with increased vocational enrollments. Examples were:

- 2 + 2 programs, advanced credit, and articulation programs
- Exploratory, cluster, orientation, or career preparation programs in middle school or grades nine and ten
- Accreditation standards requiring vocational education availability or at least access
- Integrated vocational and academic curricula efforts
- Recognition of vocational education in graduation requirements or as an alternative for academic credit (Strickland, et. al., 1992, p. 12)

The NCRVE study also identified several common factors associated with states that experiences decreased vocational enrollments. Examples of these were:

- Academic bandwagon emphasis in development of new graduation requirements or accreditation standards
- Traditional vocational programs, multi-year programs, three to four hour block courses and travel time to vocational training centers
- Increased postsecondary entrance requirements (Strickland, et al., 1992, p. 12)

Strickland et al. concluded,

Efforts to reform or restructure vocational offerings appear to have a positive effect on encouraging continued student participation in these programs, yet the pressure on students to meet increased academic, non-vocational requirements for high school graduation and/or entrance into postsecondary education certainly makes it difficult to accommodate these students' vocational interests. Clearly, resistance to restructuring vocational programs cripples the ability of vocational education to serve these students (p. 23).

These new academic and graduation requirements for students pose obstacles for secondary vocational programs. All vocational programs have suffered from the increased demand on students and the shrinking of the number of electives available for high school students. A large percentage of high school students earn secondary credit in vocational education in areas such as business education, health occupations, marketing education, family and consumer sciences, technology education, and T&I education. The largest percentage of course taking occurs in business education and trade and industrial education. One problem often identified is that most students do not earn multiple credits in vocational education. "Almost every high school student earns at least some credits in vocational education courses, but only one in four graduates as a vocational student, that is, one that earns at least three credits within one vocational program area" (Plawin, 1994, p. 43).

How do these percentages relate to the number of vocational instructors? Approximately 20 % of grade nine to 12 instructors teach vocational subjects (Boesel, et al., 1994). Of these vocational instructors, the largest percentages are from business education (29 %) and T&I education (18 %). The remaining vocational instructors are distributed between technology (10 %), agriculture (8 %), consumer homemaking (8 %), occupational home economics (4 %), marketing or distributive education (4 %), technical or communication (3 %), and health occupations (2 %) (Plawin, 1995, p. 27).

Historically, the education levels of vocational instructors, particularly T&I, have differed from those of non-vocational instructors. Trade experience and expertise have often been equal or greater factors in the selecting of vocational instructors. Boesel et al. (1994) found that "While virtually all academic instructors have at least a bachelor's degree, 12 percent of secondary vocational teachers do not" (p. 11). Boesel et al. concluded that all secondary vocational instructors should be required to obtain a bachelor's degree in addition to quality work experience. It was further reported that "A bachelor's degree with pre-service training in education should be a standard requirement for certification of all new vocational teachers. A limited amount of relevant occupational experience should also be required or encouraged in most subjects" (Boesel et al., 1994, p. 12).

What effect will education reform have on secondary T&I education? Unfortunately, the answer is not clear. What is clear however, is that T&I stakeholders must make careful

plans to ensure that T&I education continues to improve and serve the education and employment needs of today's and tomorrow's workforce.

Purpose of Study

The purpose of this study was to assess the climate for the adoption of a proposed reform model for secondary T&I education in Virginia. Vocational administrators and T&I instructors beliefs about the extent to which the adoption of the proposed model would precipitate selected outcomes were measured by using an instrument developed specifically for this study.

Significance of Study

This study will provide information concerning the climate for change in secondary T&I education in Virginia. Historically, secondary T&I programs are costly and slow to adapt to change. This study will also provide information that will assist localities and the VADOE in program planning and future program development. Information obtained by this study will assist VADOE officials in pilot testing the proposed model in selected school divisions and ultimately in possible implementation of the proposed model state-wide.

Research Questions

1. To what extent do vocational administrators believe that implementing the new T&I reform model would increase access to, flexibility of, and cost effectiveness of T&I programs?
2. To what extent do T&I instructors believe that implementing the new T&I reform model would increase access to, flexibility of, and cost effectiveness of T&I programs?
3. To what extent do vocational administrators' and T&I instructors' expectations agree or disagree that implementing the new T&I reform model would increase access to, flexibility of, and cost effectiveness of T&I programs?
4. To what extent do vocational administrators believe that increasing access to, flexibility of, and cost effectiveness of T&I programs would facilitate selected reform outcomes?
5. To what extent do T&I instructors believe that increasing access to, flexibility of, and cost effectiveness of T&I programs would facilitate selected reform outcomes?

6. To what extent do vocational administrators' and T&I instructors' expectations agree or disagree that increasing access to, flexibility of, and cost effectiveness of T&I programs would facilitate selected reform outcomes?
7. How important are each of the selected reform outcomes to vocational administrators?
8. How important are each of the selected reform outcomes to T&I instructors?
9. To what extent do vocational administrators and T&I instructors agree or disagree on the importance of the selected reform outcomes?
10. What is the climate for the adoption of the proposed model?

Delimitations

The population of this study has been delimited to vocational administrators who were identified from a list supplied by the Virginia Department of Education and T&I instructors from selected school divisions. For the sub-set of T&I instructors, an attempt was made to include instructors from school systems in all eight of the superintendent's regions in Virginia (See Appendix A), small and large schools, as well as rural, urban, and suburban schools. Although an attempt was made to ensure representation from all segments of the population, the population used in this study is not a scientific sample of T&I instructors in Virginia.

Definition of Terms

Access. The opportunity to participate in T&I programs by secondary and postsecondary students and adults.

Capstone Level. Instruction specifically designed to prepare individual students for transition to work or advanced postsecondary education.

Cluster Level. Instruction organized around a family of related occupations.

Cost Effectiveness. Maximizing program effectiveness for given outcomes within cost constraints.

Flexibility. The ability to modify program characteristics and procedures such as length, scheduling, occupational specificity, delivery mode/location, and personnel utilization.

Innovative Program. A program or substantive revision of a standard program, designed to meet unique local educational or workplace needs.

Instructional Unit. A logical combination of technical, academic, skill, and employability competencies which is normally a subset of existing course content.

Orientation Level. Instruction focused on orientation to, and exploration of, families of related occupations.

Personal Career and Educational Plan. A plan developed by each student that includes an approved combination of academic courses, T&I instructional units/courses, and other local or state required courses and experiences.

Programmatic Component. The component of the model concerned with the structure and delivery of T&I programs.

Program Planning and Evaluation Component. The component of the model that defines the processes and procedures to be used to plan, initiate, and evaluate T&I programs.

Standard Programs. Programs which have approved uniform statewide course requirements, developed curriculum guides, competencies, and facility and equipment specifications.

Teacher Preparation and Development Component. The component of the model that addresses the issues of initial teacher preparation and continuing professional development.

Chapter Two

Literature Review

This chapter presents a review of the literature concerning general education reform, reform of vocational education, and Victor Vroom's expectancy motivational model. Also contained in this chapter is an outline of the practical basis for this study. Section one focuses of types and waves of education reform. Section two outlines major themes of vocational education reform. Section three highlights and describes the new T&I delivery model and how it has been designed. Section four outlines Victor Vroom's expectancy motivation theory which serves as the theoretical basis for this study.

Education Reform

What is meant by education reform? Scholars, educators, government officials, and countless others have proposed many definitions. Koppich (1990) defined education reform as a synonym for change. She writes that, "a government reform has occurred when a significant public office, agency, or group of private individuals is required to perform, or is prohibited from performing, an act" (p. 13). She indicated that reform is a response to a demand for change and that educational reform movements are in their root a political process.

Warren (1989) defined reform as ". . . a planned solution to perceived problems" (p. 375). Soltis (1988) indicated that "reforms are ordinarily proposed to repair, improve, or redirect an institution, not to change them in radical ways" (p.24).

The need, or perceived need, to reform our educational system can not be underestimated. It seems that everyone from religious groups to politicians are "bashing" the current make-up of public education. Boschee (1989) remarked that "as in the past, the nation's elementary and secondary schools are used as a catchall for problem social issues and as whipping boys for the current US economic standing in the world" (p. 78). It is important to examine the history of education reform to predict the future success of attempts to reform education. The following is a brief history of education reform prior to 1983.

Education Reform in the 1990s

The Pre-Cold War Era

Heffner (1993) wrote that a noticeable theme about American education since the turn of the century has been the increased expectations society places on the public schools.

Heffner continued that the United States emerged as the major world political, educational, and economical power. Changes would follow in the world economy and in the demographics of the United States. Goodlad (1990) wrote, "After World War II, scientific and technological developments began to affect the economy, the nature of community, and the family in a way that has made academic learning necessary; and academic learning problems our nation's number one social issue" (p. 31).

Goodlad's (1990) work outlined the need for a change in the educational system. The country was experiencing a change in its way of thinking. He stressed that these changes would focus on what he termed "academic learning," subjects like math, english, history, and science. This is similar to what is occurring today in the Commonwealth of Virginia. The movement is again to focus on the basic skills of math, english, history, and science. The rationale of many policymakers is that by returning to these so called "basic skills," the problems facing educational systems will be solved. History has shown that this did not work in the past, and odds are that this movement back to "basic skills" will not work in the future either.

The Cold War Era and Sputnik

The beginning of the Cold War also impacted educational institutions. Spring (1976) found that the end of World War II brought a new movement of education reform. He found that one of the first movements to develop was a concerned citizen's group whose primary function was to rid school systems of communists and communism. Spring continued that the increasing fears caused by the Soviet Union exploding nuclear devices, mainland China coming under Communist control, and the Korean War all added to the growing fear and anti-intellectualism of the 1950's.

Koppich (1990) indicated that the launching of Sputnik in 1957 was the event that set off the major concerns about the United States' educational competitiveness with the former Soviet Union. She concluded that the result was that the American society blamed the educational system for the Soviet Union's victory in space. Long (1991) indicated that many Americans viewed the Soviet Union's success as evidence of the superiority of their public education system. Science and mathematics would be the focus of new educational reform.

The launching of Sputnik resulted in the National Defense Education Act of 1958. The National Defense Act became the first major program of federal aid to education (Koppich,

1990). Bacharach (1990) wrote, "Sputnik contributed directly to the passage of the National Defense Education Act of 1958 -- certainly one the most significant pieces of federal legislation affecting schools and colleges ever passed" (p. 10).

Walberg (1986) indicated that the National Science Foundation "took the lead by establishing a billion-dollar program to give priority to the sciences and mathematics in the school curriculum. The goal was to produce more scientists and engineers to meet the challenge of the Cold War and space race" (p. 5). Harris (1961) indicated that "schools were being spotlighted in newspapers, magazines, radio, and television -- every medium of mass communication" (p. 3).

The blame for falling behind was being placed squarely on the shoulders of the education system. This blame was not generally backed up by statistics or research, it was the result of public anger and upheaval. In 1984 Lucas wrote, "Seeking scapegoats, politicians, academics, and military leaders turned upon the schools" (p. 10).

Smith (1986) remarked, "the systematic transfer of classroom control from teachers to external authorities began in the United States in the panic of threatened national esteem that followed the launch of Sputnik" (p. 86). For better or worse, what Smith called the "bureaucratic invasion" of classrooms had begun.

The Civil Rights Era

The beginning of the Civil Rights Era brought a change in the national educational focus. The focus was moving away from science and mathematics to a focus on the interests of the American society and its people. Beginning in the 1960's, national educational policy began to shift toward an interest in the problem of poverty (Spring, 1976). Boschee (1989) characterized the time as a shift from technological perspective to a social and political perspective. Heffner (1993) characterized the era as having even a larger involvement of the Federal government in education.

An emphasis on social reform movements followed during the next two decades (Pulliam, 1991). Heffner (1993) concluded that the act most associated with this time period was the Elementary and Secondary Education Act of 1965. He indicated "that the act was wide-ranging and involved the Federal government in public education so deeply that the question of whether the government should be involved in education was no longer seriously broached" (p. 41).

Involvement in the Vietnam War also influenced the thinking of American society during this time period. Spring (1976) summarized that American involvement in Vietnam resulted in a sharp protest against educational policy. “Political and social movements aimed at freeing the individual from bureaucratic constraints and helping the poor, especially ethnic and racial minorities, swept across schools, affecting research, policy making, and school practices” (Warren, 1989, p. 371). Spring (1976) indicated that the legacy of the Civil Rights Era was increased federal control of American education.

The Mid 1970s to Early 1980s

This period was exemplified by the “back-to-the-basics” movement (Walberg, 1986). He wrote, “A series of reports beginning in 1973 viewed the problem of youth disaffection, unemployment, and disruption as evidence that our schools had failed and that it was time to return the high school to its narrow academic mission emphasizing basic academic skills” (p. 8). Many factors were affecting the social and political climate for the mid 1970s. Pulliam (1991) indicated that the Watergate scandal, energy crisis, urban congestion, rising crime, and other issues increased dissatisfaction with the social order.

This time period also brought a change in the demographics of the country and the schools. Fewer students were occupying our classrooms. Heffner (1993) wrote that many American taxpayers no longer had children of school age. He concluded that it would become difficult to continue the federal focus on public education. Toch (1991) concluded that the upheavals of the 1970’s resulted in public education losing much of its popular and political support. Leonard (1984) found that by the early 1980’s, education had for the most part been dropped from the national agenda.

1983 and a Nation At Risk

Terrel Bell, President Ronald Reagan’s first Secretary of Education created the National Commission on Excellence in Education. The commission released its report, A Nation at Risk, and a plethora of new issues resulted that would challenge the American educational system. Toch (1991) reported that several million copies were distributed through reprints and the professional press. Gross (1988) concluded that A Nation at Risk was credited with creating a national movement of educational reform. Goens (1991) wrote, “As people watched the competitiveness of the US economy decline, they began to question the effectiveness of education, debating its very purpose and politicizing its operation” (p. 4).

Toch (1991) summarized that the reform movement of the 1980's was tied to a greater need for economic competitiveness. He wrote, "A revolution is underway in the American workplace. With the nation passing rapidly out of the industrial age, lunch-bucket jobs were being replaced by work that stressed brains over brawn. No longer was the assembly line or the steel mill a way into the middle class for the ill-educated" (p. 40). The report, A Nation at Risk, was having a profound affect on how America viewed education.

The next few years brought several new "waves of reform." From roughly 1983 to the present there have been four waves of reform.

Wave One Reform

The three year period from 1983 to 1986 has been referred to as the first wave of education reform (Bacharach, 1990; Heffner, 1993; Koppich, 1990). Koppich wrote that, "during the first wave of reform, many states increased high school graduation requirements and added more academic core courses" (p. 147). Johnston (1985) found that over 275 task forces were created within a year of the release of A Nation at Risk. Bowers (1988) wrote, "the creation of the educational commissions can be seen as a symbolic act to show the American people that government was concerned about problems facing the country and was able to act" (p. 7).

The results of the first wave appear to be mixed. Flannigan (1991) found that "the hysteria to get on the reform bandwagon by state politicians, including governors and legislators, brought about a glut of legislation under the rubric of education reform" (p. 2). Bacharach (1990) concluded that wave one reforms centralized educational policymaking and as a result increased rules and regulations.

Wave one reform began primarily as a result of the report A Nation At Risk. This report and the early 1980's in general marked the beginning of a movement from the political left toward the political right. A movement was underway to push the national education agenda to reflect a more conservative philosophy. This movement was marked with examples such as the renewed emphasis on basic subjects such as math, science, history, and english. Government officials representing the Reagan administration were determined to counter-balance what they believed had been a liberal bias on the US educational system by organizations such as the National Education Association. The primary result was that wave

one can be characterized as more of a political movement and less of an educational movement.

Wave Two Reform

“The origins of the second wave of reform proposals can be traced to a series of studies that captured considerable attention, at least among those concerned about improving the nation’s schools” (Bacharach, 1990, p. 217). Among these reports were the Holmes Group’s Tomorrow’s Teachers, Time for Results by the National Governors Association, and A Nation Prepared: Teachers for the 21st Century by the Carnegie Foundation. Koppich (1990) reported that these reports argued that more attention must be paid to the profession of teaching and the organization of schools. Heffner (1993) concluded that the Carnegie Report had a major impact and was credited with being the key report in the development of the second wave of educational reform. Heffner also added “that the Carnegie Report called for professional autonomy of teachers and for efforts to attract highly qualified people to the profession” (p. 53).

The second wave of reform resulted in the teacher empowerment movement. Elmore (1990) found that “the term empowerment was often used in a rhetorical manner. There was a consensus that the growth of school bureaucracy and too much regulation by federal, state, and local government had weakened the authority of teachers” (p. 15). This led to a new way of looking at school reform. The attempt in this wave was to change from the top-down approach of the first wave to a more bottom-up approach. This was backed up by Schlechty (1990) when he concluded, “that the preference for a bottom-up approach to reform is that ideas, regardless of their source, are more likely to be acted on if people understand and believe in them” (p. 49).

With this new focus of reform came problems. The change to a bottom-up approach empowering teachers was costly. Both political and financial capital were expended. Elmore (1990) asked the question, “Who empowers whom?” (p. 22). Long (1991) concluded that along with calls for reform came a demand for still more money for education.

Wave two reform introduced the term “restructuring” to the educational environment. Baron (1992) summarized that restructuring was the buzzword of the second wave of reform. This term came to education from the world of business (Finn, 1992). Restructuring’s new focus was on changing the entire educational system. Schlechty (1990) argued that “to

change an organization's structure, therefore, one must attend not only to rules, roles, and relationships, but to systems of beliefs, values, and knowledge as well. Structural change requires cultural change" (p. xvii).

Heffner (1993) concluded about second wave reform that "restructuring was a reaction to empowerment, which was a reaction to excellence" (p. 58). Wave two reform was marked by a shift in accountability. Previously, education had been organized and financed primarily by state and federal agencies. With this state and federal control came a great bureaucracy. Educational scholars began to theorize that the improvement of teachers and methods of instruction would be the answer. The changes, like previous attempts to reform the educational system, were primarily symbolic in nature. Like many proposed reform efforts, wave two lacked two important resources. It lacked the financial resources to achieve the desired changes and more importantly, it lacked the time and patience to allow the "systemic changes" Schlechty purported.

Wave Three Reform

Bacharach (1990) argued the need for a third wave of reform that put students at the center of reform. Bacharach concluded that the reform movement's statements have very little to say about students but much to say about curriculum and staffing. The first and second waves of reform view the appropriate role of teachers in radically different ways, but both assume that reforming teachers' roles and the quality of their performance can reform the schools' performance (p. 146).

The third wave of reform came to be known as the time of "building consensus and collaboration" (Lewis, 1992). This resulted from a 1989 meeting of state governors convened in Charlottesville, Virginia organized by then President George Bush. Sarason (1990) concluded that this meeting was President Bush's attempt to improve the interaction between federal and state governments. The meeting resulted in President Bush unveiling national performance goals for education (Heffner, 1993). These goals are known as America 2000.

From the beginning, educational scholars were not optimistic. Eisner (1992) indicated that the new America 2000 would likely not have any more influential affect than previous reforms. Penning (1992) concluded that within a year the new strategy had not accomplished much nor should we have expected it to have accomplished much. Heffner (1993) concluded

that the collaboration movement did not appear to have the necessary emphasis to drive the gears of reform any more than earlier waves.

The emphasis was again primarily perception. The governors were brought together to focus public perception on the need to improve our schools and the way we educate. This goal was accomplished. There was a national focus on education and the rhetoric of the Charlottesville conference.

Wave three reform was characterized as rhetoric. Primary control and funding authority would remain a state and federal issue. The governors conference organized by then President Bush did achieve the goal of increasing national awareness. Additional problems facing the educational system were identified, but few solutions were recommended. The third wave reform movement was marked by attempts to change perception with little or no changes in practice.

Wave Four Reform

The fourth wave of reform was or is characterized by activity at the grass roots or local level (Bacharach, 1990; Heffner, 1993; Koppich, 1990). Heffner indicated that “fourth wave reforms appeared to grow out of wave three, but with the realization that local communities must take action to improve their own school systems” (p. 61). This grass roots emphasis came from many different areas. Parent groups, elected officials, and religious groups have highlighted the need for changing how our schools educate.

It remains to be seen if this wave of reform will have a greater affect on the educational system than reform efforts of the past. Wave four reform is beginning to examine the problems of the educational system. Problems such as overcrowding, under-staffing, technological deficiencies, and budget-shortfalls are beginning to be examined. The change is occurring from one of a focus on perception to one of a focus on practice. The emphasis for grass-roots involvement from the local officials is optimistic. The challenge will be to balance the need for local involvement with the practical restraints of the state and federal government. For wave four reforms to be successful, some financial and organizational control will have to be shifted from the state and federal government to localities. In turn, these localities must be ready and willing to accept the added responsibilities this control will bring. In the end, the educational community will have to be given the time to allow any potential changes to evolve and improve the current status of the American educational system.

Summary

It is clear that there is no one definition of education reform. Education reform has been and will likely continue to be defined by the mood of American culture. The pre-cold war era, the cold war era, the civil rights era, the 1970s and 1980s, and A Nation at Risk have all affected the American educational environment. Recent years has brought an emphasis of four waves of education reform. During wave one, the focus was on increasing graduation requirements and adding more academic core courses such as math, science, history, and english. This period began what today is a heated debate about what the purpose and focus of the American educational system should be.

Wave two reform was a movement toward accountability and evaluating the role and importance of teachers. Reports such as A Nation Prepared: Teachers for the 21st Century argued for more attention on the profession of teaching and the organization of schools. Little reform resulted as a result of no change in the federal and state control of the educational system.

Wave three reform was marked by an increased emphasis on students. The national meeting of governors organized by then President George Bush helped to re-focus the national agenda on the problem of education, but did little to recommend solutions or changes in the make-up of the American educational system.

Wave four reforms are currently underway. This period is marked by an emphasis on grass-roots involvement. It is too early to know what the results of this wave will be. Future studies will document the impact and effectiveness of wave four reforms.

Major Themes in Vocational Education Reform

Reform of vocational education has typically followed a similar path as general education reform. Teacher education, integration of academic and vocational education, and school-to-work transition are three movements relating specifically to vocational education reform. An argument can be made that as with general education reform, vocational education reform has been guided by a general theme of doing more with less.

The 1994 National Assessment of Vocational Education (NAVE) Report has impacted vocational education. The report was a part of a major effort by the Congress of the United States to evaluate and assess the effectiveness of vocational education. The 1994 NAVE was mandated by the 1990 Carl D. Perkins Act (Section 403) and assigned to the Office of

Educational Research and Improvement (OERI) in the US Department of Education. Congress defined the purpose of the national assessment as follows. “In order to evaluate the Perkins initiatives and to provide information for the next round of legislation in the mid-1990’s, the Act calls upon the Department of Education’s Office of Educational Research and Improvement to conduct a National Assessment of Vocational Education” (Boesel & McFarland, 1994).

Teacher Education. Teacher education has become an increasingly important factor in the reform of vocational education. Camp and Heath (1988) found that “the professional literature in non-vocational education is replete with research and theoretical discussions of the induction process, but the unique induction problems and needs of vocational education teachers have received little systematic attention” (p. 1).

Historically, vocational education instructors have been recruited from non-traditional teaching backgrounds. Many times, these newly recruited instructors came from business and industry with strong trade experience and little or no formal postsecondary training. Trade and industrial instructors, for example, often have extensive practical experience in their trade area, but frequently little or no formal pedagogical preparation. The Perkins legislation required that the preparation and qualifications of vocational instructors be evaluated (Boesel & McFarland, 1994). The NAVE Report was specially critical of secondary trade and industrial (T&I) education instructors. NAVE found that, “Forty-five percent of secondary T&I instructors have less than a bachelor’s degree” (Boesel & McFarland, 1994, p. 11).

The NAVE study stresses further education for these instructors while also stressing the need for less occupational experience. NAVE reported the following concerning further education and occupational training.

Research on the subject suggests that several years of occupational experience makes a positive contribution to teaching vocational subjects, but that additional years of experience do not. On the other hand, formal postsecondary education is positively associated with desirable teaching and student outcomes. Thus, instruction in trade and industrial would benefit if the teachers had more formal education and less occupational experience. More formal education would also facilitate efforts to integrate academic and vocational education (Boesel & McFarland, 1994, p. 12).

Taking into account the situation as NAVE described it, several actions are recommended to remedy the outlined problem. These include:

- A bachelor's degree with pre-service training in education should be a standard requirement for the certification of all new vocational teachers and occupational faculty. A limited amount of relevant occupational experience should also be required or encouraged in most subjects
- New academic teachers should have more of an orientation to the world of work, possibly through courses in business and technology or in methods of teaching academics in a work-related context
- New vocational teachers should have more courses and in particular, more rigorous courses in the liberal arts (especially math and science) and in computers (Boesel & McFarland, 1994, p. 12)

Teacher education is essential in the success of new and continuing instructors. The answer lies somewhere between more formalized classroom experience (pedagogical knowledge) while maintaining the practical trade area experience (technical knowledge). Jensen (1986) reported that nationally, 15% of new teachers leave the profession after the first year and 50% will leave within six years. Camp and Heath (1988) concluded, "Although pre-service teachers certainly need a foundation in good teaching methodology and program planning prior to graduating, there is no assurance that this foundation will be adequate training to provide them with a basis for surviving during their first few years of teaching" (p. 9).

Integration of Academic and Vocational Education. Integrating vocational and academic education is a goal outlined in the Perkins legislation. Section 113 of the Perkins Act mandates an increased emphasis on vocational and academic integration (Boesel & McFarland, 1994). NAVE concluded:

In general, secondary vocational programs are not as coherent or rigorous as they should be. They usually lack prerequisites, which maximizes access but reduces chances of aligning vocational courses with each other or with academic courses. Most districts, including Title II grant recipients, do not meet the Perkins requirement for a coherent sequence of academic and vocational courses. Only about one-third of districts, encompassing one-half of secondary students, require a sequence of vocational courses for program completion. However, a slight majority of districts,

encompassing almost three-fourths of students, require a concentration of vocational courses in an occupational area (regardless of course level). Such concentration is associated with higher earnings if a training-related job is found (Boesel & McFarland, 1994, p. 13).

The 1994 NAVE Report also examines the idea of cross-curricular activity. NAVE stresses the importance of vocational courses having academic content, but also stresses the importance of academic courses having vocational content. The following findings directly impact the development of future vocational and academic integration. NAVE concluded:

Cross-curricular content is of obvious importance in integrating academic and vocational education. Yet vocational courses have only modest academic content, and academic courses have even less occupational content. A little over half of vocational instructors spend at least 10 percent of class-time on academics, while only 18 percent of academic instructors spend that amount of time on occupational subjects. As in the case of teacher preparation, there is probably enough cross-curricular content for the first stages of integration, but more will be needed if integrated education is to be the principal approach to learning for most secondary students (Boesel & McFarland, 1994, p. 14).

School-to-Work Transition. Like teacher education and the integration of academic and vocational education, school-to-work transition has become a key theme in the reform of vocational education. The US Departments of Education and Labor organized and implemented the Clinton Administration 1993 initiative. The School-to-Work Opportunities Act of 1993 combined Carl D. Perkins and Job Training Partnership funds to finance planning for pilot projects, skill standards, and curriculum development in every state (Lewis, 1993).

The School-to-Work Opportunities Act is designed to build a national system of state-run, local partnerships joining employers, educators, and others together to build a high quality school-to-work system. The intent is to offer American young people access to a performance-based education and training program that joins the worlds of school and work, leading to portable certificates of competencies recognized by employers, that prepares students for a first job in a high-skill, high-wage career, while increasing their opportunities for further education. The legislation was written with advice and expertise of expert

practitioners from existing school-to-work programs (Jobs For The Future, 1994, p. 2)

School-to-work transition is organized around three basic components. The basic framework is that all students should have a well-rounded educational experience including a school-based component, a work-based component, and connecting activities.

The school-based component should provide for career exploration and counseling. Each educational program should be based on high academic and skill standards. The goal of the school-based component is to provide an adequate base that will allow for continued life-long learning. Many times the school-based component would continue in one or more years of postsecondary training.

The second component, work-based learning, should be a planned and supervised experience in a professional workplace. Although not required, this opportunity is often formal-paid work experience. The goal of this component is that students will obtain the in-depth knowledge and understanding of technologies and the skills needed to succeed in the world of work.

The third component is connecting activities. These are activities that literally connect the schooling process with the world of work. These activities include employers, parents, instructors, counselors, and students. Students' examples are mentorships and shadowing experiences. Examples for instructors are summer internships and employment opportunities. These experiences are designed to assist in the overall improvement of the educational process. It is not the goal of this component to replace or replicate the other components, but ultimately to compliment and improve the school-based and work-based components.

Summary

Major themes of vocational education reform have primarily followed general education reform. The emphasis has been on doing more with less. A more subtle theme has been moving away from vocational subjects and toward subjects such as math, science, history, and english. Reform movements such as teacher education, the integration of academic and vocational education, and the school-to-work transition movement have impacted vocational education.

Reform of vocational teacher education has been highlighted by a movement toward a more formalized pedagogical training process. This movement is similar to the wave two

general education reform movement. The focus is on improving the quality of teachers and the quality of instruction. The need for teacher pre-service and in-service training has also been identified.

The reform movement of increasing the integration of academic and vocational education has resulted in a need for more academic content in vocational subjects, but also more vocational content in academic subjects. This movement is similar to the general education movement of the mid 1970's through early 1980's and wave two reforms. The general emphasis has been to increase the academic content of courses and to increase the overall graduation requirements of all high school students.

The school-to-work transition reform movement has more traits similar to wave four reforms. It is focused on localized involvement such as school-based, work-based, and connecting activities. The goal of this movement is to increase the in-depth knowledge and understanding of technologies and skills needed to succeed in the world of work.

Practical Basis of This Study

The practical basis for this research originated from work completed for the Virginia Department of Education (VADOE) as part of the project, "*An Analysis of Trade and Industrial Education in Virginia and Recommendations for Improvement*" (Project). It was a result of a joint effort between the VADOE, trade and industrial education (T&I) practitioners, school administrators, counselors, and other school personnel. Representatives of business and industry, parents, and students also participated in the process.

Project staff from Virginia Tech used data provided in the report, "*Trade and Industrial Education in Virginia: Analysis of Field Reports of Status, Problems, and Recommendations*," to identify ten categories used for data synthesis. These criteria were the major categories of concern identified as a result of regional meetings. These categories became the design criteria for the vocational administrator and T&I instructor questionnaires used in this study. These design criteria are listed below followed by a brief description of each.

Design Criteria

Image

Includes areas such as marketing, recruitment, education of other groups concerned about T&I, public relations, and similar concerns.

Funding

All comments dealing with a need for resources, equipment, materials, supplies, expansion or improvement of facilities, etc.

Curriculum

Comments dealing with electives, priorities in instruction, skills included, workplace changes, computer skills, updating of curriculum or competencies, etc.

Programs

Scheduling, entrance/exit requirements, class size, special programs, prerequisites for program entry, standards, etc.

Students

Mainstreaming, student characteristics such as motivation, quality, values, support services for students, etc.

Teachers

In-service, certification, degrees, staff development, quality of instruction.

Collaboration, Cooperation, and Communication

With parents, industry and business, community advisory groups, etc.

Guidance

Guidance services such as vocational counseling, testing and assessment for guidance purposes, staff development of guidance personnel, need for specialized guidance counselors, etc.

Administration

Evaluation, policy regarding dropouts, retention, discipline, violence, dumping, attendance, administrative support, etc.

Enrollment and Placement

Enrollment problems, placement problems, dropouts from programs and other related concerns (Asche, et al., p. 9).

Three characteristics were identified that should be included in the design of any T&I program. These characteristics are increased access to, flexibility of, and cost effectiveness of T&I programs. From these characteristics, came the development of the instructional unit based approach to T&I education. This newly designed approach consists of three separate, but related, components. These components are the programmatic component, the teacher

education and continuing development component, and the planning and evaluation component. Of the three components, the programmatic component is central for this study because it deals primarily with the delivery mechanism of T&I programs.

The programmatic component of the model is concerned with the structure and delivery of T&I programs. The programmatic component was designed to meet several specific characteristics:

- Accommodate the needs of a widely diverse clientele
- Variety in both depth and breadth of instruction and experience must exist within programs
- Instruction and learning experiences should utilize appropriate community resources and not be limited to just those available in the school or through traditional co-op, nor to traditional time periods
- Entry and exit from programs should be possible at a variety of points and not necessarily be based on clock-hours
- All participants must be prepared for work and further education (O'Reilly, et al., p. 20)

The programmatic component consists of school-based and community-based activities. School-based activities are traditional in nature and provide for a basic theoretical base for future student learning. The community-based activities are primarily applied in nature and are designed to maximize the resources available to students. These activities should utilize advanced technology not available in school settings and expose students to advanced skills that will be needed in work settings. Ideally, programs would have a balance between school-based and work-based activities.

Instructional Units. The proposed model is a change from traditional T&I programs. Traditional programs have been program based, occupational focused, and primarily school-based. The proposed model is based on an instructional unit approach. An instructional unit based approach is a logical combination of technical, academic, skill, and employability competencies which are normally a subset of existing course content (O'Reilly, et al., p. 21).

These instructional units will allow for varying lengths of courses. Traditional T&I courses have been organized around three hour blocks five days a week. This has historically prevented many students from fully utilizing T&I programs. A change to an instructional unit

approach would allow students more flexibility in scheduling T&I classes to fit their already demanding schedules. In an effort to fully utilize T&I programs, each student will be required to complete a personal career and educational plan. A personal career and educational plan is developed by each student which includes an approved combination of academic courses, T&I instructional units/courses, and other local or state required courses and experiences (O'Reilly, et al., p. 37). These plans are completed in consultation with an academic instructor, vocational instructor, guidance personnel, and parent or parents when possible.

An instructional unit based approach would also allow for a more cost effective program. By dividing current course content into instructional units, local school personnel could eliminate or at the least lessen unnecessary overlap and duplication. After this is completed, local school personnel can better plan and implement T&I programs to meet the needs of their region.

Instructional units would be organized in three levels. These levels are orientation, cluster, and capstone. The orientation level is instruction focused on orientation to and exploration of families of related occupations (O'Reilly, et. al, p. 22). This level would ideally be positioned in the middle school level, or at the least in the ninth and tenth grades. Units in the orientation level should include both a school-based and a community-based component (O'Reilly, et al., p. 22). The school-based component would include experiences that would supply the student with a theoretical perspective along with laboratory experience when appropriate. The community-based component would allow the student to experience occupations in actual work environments with members of specific workforces.

The second level of instructional units is designated the cluster level. The cluster level is instruction organized around a family of related occupations. This level contains two distinct emphases. These are an emphasis in both the skill and technical areas (O'Reilly, et al., p. 24). The cluster level also includes two types of instructional units.

The first type is those which encompass the basic core skills, attitudes, and knowledge common across a group of related occupations. The second type is those units which include skills, attitudes, and knowledge specific to a single occupation or a group of highly related occupations (O'Reilly, et al., p. 24).

The cluster level will also utilize both the school-based and community-based environments.

The third and final level has been designated as capstone. The capstone level is instruction specifically designed to prepare individual students for transition to work or advanced postsecondary education (O'Reilly, et al., p. 26). The purpose of this level is to prepare students for immediate entry into an occupation or progression to a closely related postsecondary technical program (O'Reilly, et al., p. 26). Capstone experiences should include structured activities in both a school-based and a community-based environment.

Instructional unit based programs should prepare all students for work and further education. An instructional unit based approach should consist of standard and innovative programs. Standard programs would be "those that have approved uniform state-wide course components, developed curriculum guides, competencies, and facility and equipment specifications" (O'Reilly, et al., p. 33). Innovative programs would be "any new program or substantive revision of a standard program designed to meet local or emerging workplace needs. These programs would be approved on a temporary basis" (O'Reilly, et al., p. 33). Innovative programs would be evaluated locally and be designed to meet local educational and employment needs.

Summary

The practical basis for this research originated from a newly developed delivery model for secondary T&I education. This model is based on an instructional unit based approach to T&I education. An instructional unit based approach "is a logical combination of technical, academic, skill, and employability competencies that are normally a subset of existing course content" (O'Reilly, et al., p. 21). This model was designed to increase access to, flexibility of, and cost effectiveness of T&I programs. It consists of school-based and community-based activities designed to fully utilize available resources. Instructional unit based programs should include standard and innovative programs. Standard programs are uniform state-wide. Innovative programs should be developed to meet local educational and employment needs. The underlying goal of instructional unit based programs is to prepare all students for work and further education.

Motivational Theory

Motivation is often a construct with many definitions. Atkinson (1964) reported that a major difficulty in defining motivation occurs because the term has no apparent fixed meaning in contemporary psychology. Steers and Porter (1979) found three components which are part

of most definitions of motivation. These were energizing human behavior, directing or channeling behavior, and maintaining and sustaining behavior. Hoy and Miskel (1982) combined these components to define motivation as, “the complex forces, drives, needs, tension states, or other mechanisms that start and maintain voluntary activity toward the achievement of personal goals” (p. 137).

Numerous theories and models have been proposed to explain behavior. These models often differ dramatically. Motivational approaches exist that influence a person, an environment, and a person-environment interaction. An example of the “person” in motivation is Maslow’s needs hierarchy. An example of the “environment” in motivation is the reinforcement theory and an example of the “person-environment interaction” is Vroom’s expectancy motivation theory.

Maslow’s needs hierarchy is a motivational theory that stresses the existence of a set of five universal needs. These are physiological needs, safety and security needs, social needs, ego and esteem needs, and self-actualization needs (Cherrington, 1989). Maslow advocated that an individual’s needs must be met in order from lowest to highest (lowest being physiological needs and highest being self-actualization). He termed this prepotency (Cherrington, 1989).

A second motivational theory is the reinforcement theory that stresses the environment as a factor in motivation. Reinforcement theory places the emphasis on the consequences of performance and techniques for assessing performance and evaluating effectiveness (Komaki, et al., 1991). Komaki, et al. (1991) summarized that reinforcement theory is often referred to as operant conditioning theory, behavior modification, or applied behavior analysis. Reinforcement theory purports that behavior is a function of its consequences.

Komaki, et al. (1991) outlined a four-step process to reinforcement theory. Step one is the need to clearly specify the desired behavior. Step two stresses the need to measure the desired performance. Step three outlines the need to provide frequent, contingent, and positive consequences. The fourth and final step is the need to evaluate the effectiveness of the desired task. The reinforcement theory stresses the concept that by analyzing the consequence, one can gain insight into why people do things.

The third motivational theory, expectancy motivation theory, deals with the “person-environment interaction.” Victor Vroom is credited as giving the first in-depth description of expectancy theory.

Vroom’s work is documented in his 1964 book, Work and Motivation. His early work was built on the work of Lewin (1939) and Tolman (1959). Radelet (1993) summarizes that Vroom’s “theory asserts that a person is motivated to act in a certain way for rational reasons which are a combination of expectancies (how much I expect that I can successfully perform actions which will bring rewards), valences (how much I value the rewards which may stem from my actions), and instrumentalities (how certain I feel that the rewards I value will result from my actions)” (p. 8-9). Vroom’s theory has been cited as “perhaps the most widely accepted theory of work and motivation among today’s industrial and organizational psychologists” (Wahba and House , 1974, p. 121).

For example, a vocational administrator is highly motivated to reform her school system if she thinks it can be accomplished (expectancy). If she believes that by implementing the reform her instructional cost per student will be lowered (instrumentality). Finally, if she places value on the savings that will result from adopting the reform (valence), she is likely to attempt implementation of the reform. Mitchell (1974) indicated that Vroom’s expectancy theory “has more supporters than any other cognitive theory in psychology” (p. 1053).

Expectancy theory (Vroom, 1964) hypothesized that motivation is a conscious, rational process involving three ideas which a person evaluates when making a decision. These are expectancy, instrumentality, and valence. Farr and Middlebrooks (1990) explain the advantages of using expectancy theory to predict behavior:

Expectancy theory does not attempt to specify the individual characteristics that affect motivation or the outcomes people see as a result of their behavior. It only describes the process by which an individual is motivated. This focus on process of motivation gives expectancy theory an advantage over motivational theories that prescribe that everyone should be motivated to achieve similar outcomes. Thus, expectancy theory can easily account for individual differences, while not ruling out the possibilities that certain outcomes or rewards may not be important for many. Therefore, expectancy theory assumes that choice behavior is a subjective process, one that is systematic at

the level of the individual -- meaning that the individual always chooses that alternative that he or she expects to yield maximum payoff (p. 198).

Vroom (1964) defined expectancy as "a momentary belief concerning the likelihood that a particular act will be followed by a particular outcome" (p. 17).

Instrumentality is defined as the perceived degree of relationship between performance and outcome attainment (Vroom, 1964, p. 17) It is a belief that attainment of an outcome is possible without a second outcome, but more likely as a result of the second outcome.

Vroom (1964) defined valence as referring to affective orientations toward particular outcomes. Vroom indicated that when using expectancy theory you must begin with a simple assumption. This assumption is that "at any given time, a person has preferences among outcomes or states of nature (p. 15). Valence, for purposes of this research is the relationship between the strength of a person's desire for, or attraction toward, two outcomes.

Victor Vroom's expectancy motivation theory may provide a rationale for why individuals are inclined toward or against adoption of the proposed T&I reform model. Expectancy motivation theory focuses on the "directing or channeling behavior" that Steers and Porter (1979) outlined. Expectancy motivation theory deals with motivational factors that might affect implementation of the proposed T&I reform model and individual receptiveness to change. It is for these reasons that Vroom's expectancy motivation model was selected as the theoretical basis for this study.

Chapter Three

Research Methodology

The purpose of this chapter is to describe the research design, population, instrument design, data collection procedures, and data analysis. Also included are descriptions of the procedures used to answer the ten research questions along with a description of respondents, and data analysis for each question. The study research questions were:

1. To what extent do vocational administrators believe that implementing the new T&I reform model would increase access to, flexibility of, and cost effectiveness of T&I programs?
2. To what extent do T&I instructors believe that implementing the new T&I reform model would increase access to, flexibility of, and cost effectiveness of T&I programs?
3. To what extent do vocational administrators' and T&I instructors' expectations agree or disagree that implementing the new T&I reform model would increase access to, flexibility of, and cost effectiveness of T&I programs?
4. To what extent do vocational administrators believe that increasing access to, flexibility of, and cost effectiveness of T&I programs would facilitate selected reform outcomes?
5. To what extent do T&I instructors believe that increasing access to, flexibility of, and cost effectiveness of T&I programs would facilitate selected reform outcomes?
6. To what extent do vocational administrators' and T&I instructors' expectations agree or disagree that increasing access to, flexibility of, and cost effectiveness of T&I programs would facilitate selected reform outcomes?
7. How important are each of the selected reform outcomes to vocational administrators?
8. How important are each of the selected reform outcomes to T&I instructors?
9. To what extent do vocational administrators and T&I instructors agree or disagree on the importance of the selected reform outcomes?
10. What is the climate for the adoption of the proposed model?

Research Design

The basic design employed in this study is descriptive. A descriptive study describes the facts and characteristics of a given population or area of interest (Isaac and Michael, 1990). This study describes the climate for the adoption of a proposed reform model for trade and industrial (T&I) education in Virginia, assesses the receptiveness to implementation by vocational administrators and T&I instructors, assesses the perceived likelihood of increased access to, flexibility of, and cost effectiveness of T&I programs as a result of implementation of the model, and examines the importance of a series of selected reform outcomes to vocational administrators and T&I instructors. Differences and similarities between the groups will be examined. The causes of those differences and similarities are beyond the scope of this study.

Population

The population of this study included two sub-groups: secondary vocational administrators and secondary T&I instructors. Equal representation of both groups could not be guaranteed as a result of the non-scientific sampling procedure employed for this study.

Vocational Administrators. Members of this segment of the population were identified from a list obtained from the Virginia Department of Education (VADOE). The list contains 145 possible subjects. These individuals are primarily responsible for the administration of secondary vocational education. Frequently their position titles differ depending upon the characteristics of the localities, examples are vocational principal, vocational supervisor, vocational director, vocational coordinator, or general administrator. But regardless of title, they are generally responsible for budget decisions, personnel, and curricular issues.

Information describing both the vocational administrator and the T&I instructors segments of the population were obtained from section six of the questionnaires. Selected highlights from both sub-groups are reported in the following paragraphs. Complete frequency tables describing demographic information for vocational administrators and T&I instructors are included in Appendix E.

Information describing the vocational administrator segment of the population was obtained from section six of the vocational administrator questionnaire (See Appendix D). Respondents were asked a series of demographic questions that would provide data to better describe them as a segment of the population.

Questionnaires were mailed to 145 vocational administrators (administrators) identified from the list provided by the VADOE. Responses were received from 120 administrators (83%). Twenty-five administrators (17%) failed to respond.

Characteristics of Vocational Administrators

(N = 120)

Number of vocational programs supervised

- Range 1 to 21
- Most frequently supervise only one program

Number of instructors supervised

- Majority (60 %) supervise less than 30 instructors

Number of students enrolled in vocational programs

- Range from 70 to 17,963

Time assigned to supervising vocational education programs

- Range from 25 % to 100 %

Administrative experience

- Five or fewer years - 26.1 %
- Twenty or more years - 29.7 %

Public school teaching experience

- Five or fewer years - 16.1 %
- Twenty or more years - 52.7 %

Highest degree earned

- Masters - 66.9 %
- Doctorate - 16.9 %

Age

- Range from 23 to 63
- Majority (62.5%) 46 to 55 years of age

Trade and Industrial Education Instructors. The second segment of the population was comprised of T&I instructors (instructors) from selected secondary schools across Virginia. School divisions were systematically selected to participate in an effort to ensure representation from urban, suburban, and rural areas and to ensure geographic representation. All instructors in the selected school divisions were included in the sub-

population. The local vocational administrators in the selected divisions were asked to distribute the instrument to the instructors. Mr. Roy A. Carter (former VADOE Trade and Industrial Education Specialist), Dr. Patrick A. O'Reilly, and Dr. Brenda D. Long provided recommendations concerning which school divisions should be selected.

Two-hundred-ninety-five questionnaires (See Appendix F) were mailed to vocational administrators for distribution to instructors. Responses were received from 129 instructors (43.7%). One-hundred-sixty-six instructors (56.3%) failed to respond.

Characteristics of T&I Instructors

(N = 129)

Area in which employed

- Urban = 11.9 %
- Suburban = 35.7 %
- Rural = 52.4 %

Type of facility in which instructor teaches

- Vocational center = 58.7 %
- Comprehensive high school = 35 %
- Jointly-owned vocational center = 6.3 %

Number of students enrolled at instructors' school

- Less than 200 = 36.6 %
- More than 1000 = 14.3 %

Teaching area

- Automotive = 17.1 %
- Construction = 11.7 %
- Cosmetology = 10.8 %

Highest degree earned

- Associates = 57.9 %
- Bachelors = 38.6 %

Age

- Range = 24 to 75
- Largest number (35.8 %) between the ages of 41 and 49

Instrument Design

The objective of both questionnaires was to obtain individual respondents' beliefs regarding selected reform outcomes proposed by the T&I model. Both questionnaires were reviewed and approved by the Virginia Tech Human Subjects Review Board. The first five sections of both the administrator and the instructor questionnaires were identical. This was done so that administrators' and instructors' responses regarding the proposed model and the outcomes could be compared. These sections were developed using Victor Vroom's Expectancy Theory as the theoretical basis. Section one of both questionnaires was based

upon the expectancy component of the theory. Sections two, three, and four utilized the instrumentality component of the theory. These sections examined whether improving access to, flexibility of, and cost effectiveness of T&I programs would be improved by implementing the proposed T&I reform model. The fifth section of the questionnaire was based upon the valence component of the theory. The objective of this section was to measure the importance of selected reform outcomes to individual respondents.

The sixth section of the questionnaire was developed separately for each sub-group. The objective of the sixth section of both questionnaires was to provide information to describe each segment of the population. Also, participants were allowed an opportunity to express general comments concerning the implementation of the model.

Questionnaires were weighted primarily on a one to five scale (one = not at all . . . five = a lot) with the exception of section five. Section five, dealing with the level of personal importance respondents placed on selected reform outcomes was weighted on a scale of one to four (one = not important . . . four = very important).

Questionnaires were critiqued by Drs. Patrick A. O'Reilly, F. Marion Asche, Jimmie C. Fortune, and C. Keith Waugh. As a result, several changes were made to improve the questionnaires.

Data Collection Procedures

Vocational Administrators. Each of the 145 vocational administrators were mailed a cover letter (See Appendix G), a summary of the proposed T&I reform model (See Appendix H), a questionnaire (See Appendix D), and a pre-stamped envelop. Approximately 1 week after the questionnaire was mailed, a follow-up letter (See Appendix I) was sent thanking them for completing the questionnaire and/or reminding them to return the questionnaire. Approximately 3 weeks later an additional follow-up correspondence was sent including a cover letter (See Appendix J), summary of the proposed T&I model, and a questionnaire. Subjects who had not responded were contacted by telephone to prompt them to respond. Each was asked if they had their original questionnaire. Those needing replacement questionnaires were mailed a copy of the original packet of materials. An effort was also made to encourage them to complete the questionnaire and return it in the pre-addressed stamped envelop provided.

Trade and Industrial Instructors. The vocational administrators of the selected localities were telephoned and asked if they were willing to assist with the study. It was expected that many had previously completed the vocational administrator questionnaire. Each vocational administrator was supplied with a brief description of the process, an estimate of the time commitment required of their instructors, and an opportunity to ask questions.

Those agreeing to assist were mailed a cover letter describing the process (See Appendix K) and packets to be distributed to T&I instructors. These packets included a cover letter (See Appendix L), a summary of the proposed model (See Appendix H), and a pre-addressed stamped envelop for each T&I instructor. One-hundred-eighty questionnaires were distributed in the first mailing. Non-respondent follow-up was difficult because there was no easy way to know which T&I instructors had completed and returned their questionnaires due to the anonymity of respondents. As a result, the only follow-up possible was to call vocational administrators and ask them to encourage their instructors to return questionnaires. This process resulted in 57 questionnaires being returned for a response rate of 31.6 percent.

A second attempt was then made to gather data from T&I instructors. Eight additional vocational administrators were contacted to gain their assistance in collecting information from their T&I instructors. One-hundred-fifteen additional packets were distributed to the second group of vocational administrators. These packets included a revised cover letter (See Appendix M), a summary of the proposed model, and a questionnaire. In an effort to obtain a better response rate, vocational administrators were asked to distribute and collect the questionnaires and return them in a pre-addressed stamped envelop. As a result, 72 questionnaires were received for a response rate of 62.6 percent. Again, non-respondent follow-up was impossible due to the anonymity of respondents guaranteed by the process.

Two-hundred-ninety-five questionnaires were distributed as a result of the first and second mailings. One-hundred-twenty-nine total completed questionnaires were received. This resulted in an overall response rate for T&I instructors of 43.7 percent.

Data Analysis

The results of the questionnaires were analyzed using descriptive statistics. The statistics used were the mean, median, mode, and standard deviation. The distributional characteristics were examined and it was determined that a chi-square statistical analysis should be used to compare the responses of the vocational administrators and the T&I

instructors. A chi-square test is used to evaluate a relationship between two variables (Howell, 1992). This statistical procedure was used as a decision making tool rather than as an inferential tool and no attempt should be made to generalize the results to a larger population. Each section of the questionnaire was analyzed individually with the results for each section reported in Chapter Four.

Chapter Four

Findings

The study results are reported in this chapter. First, a description of the questionnaire response is given. Second, the data analysis findings in response to the 10 research questions are presented.

Questionnaire Response

Administrator questionnaire packets were mailed to 145 vocational administrators in Virginia. A total of 120 vocational administrator responses were received for a response rate of 83%.

Trade and industrial instructor questionnaires were administered in selected school divisions. These school divisions were selected to secure representation from T&I instructors in urban, suburban, and rural areas and in an attempt to obtain representation from all geographic regions of the Commonwealth. Two-hundred-ninety-five T&I questionnaires were distributed. This resulted in 129 total completed T&I instructor questionnaires for an overall response rate of 43.7%.

Research Question Results

A descriptive statistical analysis with means, standard deviations, medians, and modes was completed. After reviewing the distributional characteristics of the results, it was determined that a chi-square statistical analysis should be used to test the relationship between vocational administrators and T&I instructors. Each of the ten research questions are stated followed by information used to explain each question.

The Extent Of Belief Among Vocational Administrators That Implementation Of The Proposed Reform Model Would Produce The Desired Outcomes

Research question one asked, "To what extent do vocational administrators believe that implementing the new T&I reform model would increase access to, flexibility of, and cost effectiveness of T&I programs."

As shown in Table 1, the highest mean response ($M=3.42$) was computed for the outcome "increased flexibility," followed by the outcome "increased access" ($M=3.04$). "Increased cost effectiveness" received the lowest mean response of 2.87. However, while "increased cost effectiveness" received the lowest mean response, it is interesting to observe that the variability of responses was greatest for this outcome ($SD=1.078$). The Extent Of

Belief Among T&I Instructors That Implementation Of The Proposed Reform Model Would Produce The Desired Outcomes

Research question two asked, “To what extent do T&I instructors believe that implementing the new T&I reform model would increase access to, flexibility of, and cost effectiveness of T&I programs.”

As indicated in Table 2, the highest mean response ($\underline{M}=3.33$) was associated with the outcome “increased flexibility.” The outcome “increased cost effectiveness” received the lowest mean response of 2.88. While this outcome received the lowest mean response, as was the case with administrators, instructors responses varied most on this item ($\underline{SD}=.969$).

Table 1

Administrator Beliefs Regarding the Degree to Which Model Implementation Would Achieve the Selected Outcomes

Outcome	Mean	Standard Deviation	Median	Mode	N =
Increased Access	3.04	.939	3.09	3	112
Increased Flexibility	3.42	.933	3.58	4	112
Increased Cost Effectiveness	2.87	1.078	2.94	3	111

Table 2

Instructor Beliefs Regarding Responses to the Degree to Which Model Implementation Would Achieve the Selected Outcomes

Outcome	Mean	Standard Deviation	Median	Mode	N =
Increased Access	3.27	.855	3.27	3	129
Increased Flexibility	3.33	.887	3.31	3	129
Increased Cost Effectiveness	2.88	.969	2.91	3	128

The Extent Of Agreement Among Vocational Administrators And T&I Instructors That Implementing The New T&I Reform Model Would Increase Access To, Flexibility Of, And Cost Effectiveness Of T&I Programs

Research question three asked, "To what extent do vocational administrators' and T&I instructors' expectations agree or disagree that implementing the new T&I reform model would increase access to, flexibility of, and cost effectiveness of T&I programs?" A chi-square statistical analysis was used to determine whether administrators' and instructors' responses differed systematically.

Three separate crosstabulation tables were constructed and chi-square analyses were performed for the purpose of testing the relationship between the position held by the respondents in vocational education (i.e., instructor or administrator) and their responses to each of three questions relating to possible outcomes resulting from the implementation of the proposed model. None of the relationships were found to be statistically significant at the .05 level. These results are reported in Table 3.

The Extent Of Belief Among Vocational Administrators That Increasing Access To, Flexibility Of, And Cost Effectiveness Of T&I Programs Would Facilitate Selected Reform Outcomes

As shown in Table 4, the highest mean response ($M=3.47$) was calculated for the outcome "improve image." This was followed closely by the outcome "improve quality of programs" ($M=3.46$), "improve curriculum" ($M=3.43$), and "increase student quality" ($M=3.41$). The lowest mean response ($M=2.72$) was compiled for the outcome "increase guidance services." The largest standard deviation ($SD=1.200$) was found for the outcome "increase guidance services." The median for these outcomes ranged from

Table 3

Extent of Agreement Between Administrators and Instructors Concerning Possible Outcomes
Resulting From Implementation of the Proposed Model

Outcomes	Chi-Square Results Obtained Value
Access to T&I Programs Increase	4.22
Flexibility of T&I Programs Increase	8.65
Cost Effectiveness of T&I Programs Increase	5.32

Alpha Value = .05

Degrees of Freedom = 4

Critical Value = 9.488

Table 4

Administrator Beliefs Regarding the Degree to Which Increased Access to T&I Programs
Would Achieve the Following Selected Outcomes

Outcome	Mean	Standard Deviation	Median	Mode	N =
Improve Image	3.47	0.977	3.50	3	112
Increase Resources	3.10	1.103	3.16	3	113
Improve Quality of Programs	3.46	1.068	3.64	4	113
Improve Curriculum	3.43	1.092	3.63	4	113
Increase Student Quality	3.41	0.986	3.60	4	113
Increase Number of Qualified Instructors	2.63	1.065	2.76	3	111
Increase Collaboration, Cooperation, & Communication, Between Stakeholders	3.27	0.962	3.37	4	113
Increase Guidance Services	2.72	1.200	2.78	3	113
Increase Enrollments	3.16	0.914	3.13	3	113

2.78 for “increase guidance services” to 3.64 for “improve quality of programs.” The smallest standard deviation ($SD=.914$) was associated with the outcome “increase enrollments.”

Table 5 presents administrator mean responses concerning the degree to which increased flexibility in T&I programs would achieve selected outcomes. The mean responses ranged from 2.54 for the outcome “increase number of qualified instructors” to 3.36 for the outcome “improve curriculum.” A relatively high mean response of 3.21 was obtained for the outcome “increase enrollments.” This mean was also associated with the smallest standard deviation ($SD=.953$).

Administrator responses to the degree to which they believe increased cost effectiveness of T&I programs would achieve selected outcomes is reported in Table 6. After reviewing mean responses for administrators, one can conclude that they for the most part, do not hold a high belief that increased cost effectiveness will affect the selected outcomes. Administrators and instructors disagree more on the affects increased cost effectiveness would have than the affects of either “increased access” or “increased flexibility.” Overall, administrators and instructors rated the possibility lower and also differed more in their opinions regarding its importance.

The Extent Of Belief Among Instructors That Increasing Access To, Flexibility Of, And Cost Effectiveness Of T&I Programs Would Facilitate Selected Reform Outcomes

Table 7 presents information concerning the degree to which instructors believe increased access to T&I programs would achieve selected outcomes. As shown in Table 7, the highest mean response ($M=3.54$) was reported for the outcome “improve image.” This was followed by “increase enrollments” with a mean response of 3.45. Interestingly, “increase enrollments” also had the smallest degree of variability ($SD=.916$).

Table 5

Administrator Beliefs Regarding the Degree to Which Increased Flexibility to T&I Programs
Would Achieve the Following Selected Outcomes

Outcome	Mean	Standard Deviation	Median	Mode	N =
Improve Image	3.28	0.961	3.34	3	113
Increase Resources	2.88	1.038	2.97	3	113
Improve Quality of Programs	3.32	1.022	3.50	4	111
Improve Curriculum	3.36	1.102	3.59	4	110
Increase Student Quality	3.29	0.980	3.38	4	113
Increase Number of Qualified Instructors	2.54	1.089	2.71	3	113
Increase Collaboration, Cooperation, & Communication Between Stakeholders	3.28	0.979	3.44	4	112
Increase Guidance Services	2.77	1.131	2.81	3	113
Increase Enrollments	3.21	0.953	3.20	3	113

Table 6

Administrator Beliefs Regarding the Degree to Which Increased Cost Effectiveness to T&I Programs Would Achieve the Following Selected Outcomes

Outcome	Mean	Standard Deviation	Median	Mode	N =
Improve Image	2.85	1.072	2.91	3	110
Increase Resources	2.92	1.076	2.96	3	110
Improve Quality of Programs	3.11	1.003	3.17	3	110
Improve Curriculum	2.96	1.108	3.09	3	110
Increase Student Quality	2.78	1.150	2.89	3	109
Increase Number of Qualified Instructors	2.42	1.087	2.52	3	110
Increase Collaboration, Cooperation, & Communication Between Stakeholders	2.95	1.111	3.04	3	108
Increase Guidance Services	2.55	1.219	2.55	3	111
Increase Enrollments	2.78	1.158	2.86	3	109

Table 7

Instructors Beliefs Regarding the Degree to Which Increased Access to T&I Programs Would Achieve the Following Selected Outcomes

Outcome	Mean	Standard Deviation	Median	Mode	N =
Improve Image	3.54	.960	3.65	4	129
Increase Resources	3.09	1.030	3.12	3	130
Improve Quality of Programs	3.32	1.042	3.47	4	130
Improve Curriculum	3.36	.956	3.46	4	130
Increase Student Quality	3.14	1.140	3.20	3	130
Increase Number of Qualified Instructors	2.98	.968	3.01	3	128
Increase Collaboration, Cooperation, & Communication Between Stakeholders	3.07	.982	3.14	3	130
Increase Guidance Services	3.12	1.125	3.13	3	130
Increase Enrollments	3.45	.916	3.50	4	130

Table 8 presents information concerning instructor responses regarding the degree to which they believe increased flexibility in T&I programs would achieve selected outcomes. The mean response ranged from 2.74 for the outcome “increase number of qualified instructors” to 3.40 for “increase enrollments.” The variability ranged from .898 for the outcome “collaboration, cooperation, and communication between stakeholders” to 1.074 for “improve curriculum.” The outcome “increase enrollments” had the highest mean response ($\underline{M}=3.40$) and the second smallest standard deviation ($\underline{SD}=.937$).

Instructor responses to the degree to which increased cost effectiveness in T&I programs would achieve selected outcomes is presented in Table 9. As shown in Table 9, eight of nine selected outcomes had a mean response less than 3.0. Only the outcome “increase enrollments” had a mean response ($\underline{M}=3.08$) higher than 3.0. Eight of nine outcomes also resulted in a standard deviation greater than 1.0. Only the outcome “increase collaboration, cooperation, and communication between stakeholders” had a standard deviation ($\underline{SD}=.961$) less than 1.0.

The Extent Of Agreement Among Vocational Administrators And T&I Instructors That Increasing Access To, Flexibility Of, And Cost Effectiveness Of T&I Programs Would Facilitate Selected Reform Outcomes

The first part of research question six was answered by applying a chi-square analysis. Those results are reported in Tables 10, 11, and 12. Two significant relationships were found. One significant relationship was found relating to access (Table 10) and one significant relationship was found relating to flexibility (Table 11). No significant relationship was found relating to cost effectiveness (Table 12).

Table 8

Instructors Beliefs Regarding the Degree to Which Increased Flexibility to T&I Programs Would Achieve the Following Selected Outcomes

Outcome	Mean	Standard Deviation	Median	Mode	N =
Improve Image	3.28	0.940	3.26	3	130
Increase Resources	2.96	1.015	2.97	3	130
Improve Quality of Programs	3.33	1.005	3.37	3	128
Improve Curriculum	3.12	1.074	3.16	3	127
Increase Student Quality	3.36	1.064	3.37	3	130
Increase Number of Qualified Instructors	2.74	1.061	2.83	3	130
Increase Collaboration, Cooperation, & Communication Between Stakeholders	3.08	0.898	3.05	3	129
Increase Guidance Services	2.98	1.067	2.95	3	130
Increase Enrollments	3.40	0.937	3.37	3	130

Table 9

Instructors Beliefs Regarding the Degree to Which Increased Cost Effectiveness of T&I Programs Would Achieve the Following Selected Outcomes

Outcome	Mean	Standard Deviation	Median	Mode	N =
Improve Image	2.97	1.038	2.99	3	127
Increase Resources	2.94	1.022	2.93	3	127
Improve Quality of Programs	2.95	1.091	3.00	3	125
Improve Curriculum	2.87	1.091	2.93	3	127
Increase Student Quality	2.80	1.081	2.90	3	126
Increase Number of Qualified Instructors	2.58	1.019	2.64	3	127
Increase Collaboration, Cooperation, & Communication Between Stakeholders	2.89	0.961	2.91	3	125
Increase Guidance Services	2.84	1.075	2.91	3	128
Increase Enrollments	3.08	1.040	3.18	3	126

Table 10

Chi-Square Results Regarding the Relationship of Responses Between Administrators and Instructors Concerning Their Expectations That Increased Access Would Facilitate Selected Reform Outcomes

Outcomes	Chi-Square Results
Improve Image	4.42
Increase Resources	1.41
Improve Quality of Programs	2.12
Improve Curriculum	5.11
Increase Student Quality	13.58*
Increase Number of Qualified Instructors	8.71
Increase Collaboration, Cooperation, and Communication Between Stakeholders	5.99
Increase Guidance Services	8.79
Increase Enrollments	7.39

* Indicates significance
 Alpha Value = .05
 Degrees of Freedom = 4
 Critical Value = 9.488

Nine separate crosstabulation tables were constructed and chi-square analyses were performed for the purpose of testing whether the position held by the respondent (i.e., instructor or administrator) and their expectations regarding the likelihood of the outcomes resulting from increased access to T&I programs were independent. A statistically significant relationship was found between respondent position and belief about the extent to which one of the outcomes would be affected.

Administrators' and T&I instructors' belief that increased access to T&I programs would increase the quality of T&I students was found to differ to a statistically significant extent ($X^2(4, N=241) = 13.58, p = .0088$). As shown in Table 10, of the 241 subjects who responded, 37.8 percent believed that increased access to T&I programs would increase the quality of T&I students "quite a bit." A comparison of administrators and instructors who responded that increased access would increase student quality "quite a bit" found that administrators were more likely to hold that belief.

The second significant relationship relating to research question six is reported in Table 12. Nine separate crosstabulation tables were constructed and chi-square analyses were performed for the purpose of testing whether the position held by the respondent (i.e., instructor or administrator) and their beliefs regarding the extent to which the outcomes might be affected by increased flexibility in T&I programs were independent. One statistically significant relationship between respondent position and one outcome was found indicating that administrators and instructors systematically differed in their beliefs. The differences between administrators and T&I instructors in their belief that increased flexibility of T&I programs would increase the collaboration, cooperation, and communication between T&I stakeholders was found to be statistically significant ($X^2(4, N=241) = 12.85, p = .012$).

Table 11

Degree to Which Increased Access to T&I Programs Would Increase the Quality of T&I

Students by Respondent Position

		Not At All 1	A Little 2	Some 3	Quite A Bit 4	A Lot 5	Total
Instruc.	Count	14	20	44	38	14	130
	Row Percent	10.8	15.4	33.8	29.2	10.8	100.0
	Column Percent	60.9	80.0	55.0	41.8	63.6	53.9
	Expected Value	12	13	43	49	12	130
	Chi Square	0.2	3.1	0.0	2.5	0.4	6.3
Admin.	Count	9	5	36	53	8	111
	Row Percent	8.1	4.5	32.4	47.7	7.2	100.0
	Column Percent	39.1	20.0	5.0	58.2	36.4	46.1
	Expected Value	11	12	37	42	10	111
	Chi Square	0.2	3.7	0.0	2.9	0.4	7.3
Total	Count	23	25	80	91	22	241
	Row Percent	9.5	10.4	33.2	37.8	9.1	100.0
	Column Percent	100.0	100.0	100.0	100.0	100.0	100.0
	Expected Value	23	25	80	91	22	241
	Chi Square	0.4	6.8	0.0	5.4	0.8	13.6

Table 12

Relationship of Responses Between Administrators and Instructors Concerning Their Expectations That Increased Flexibility Would Facilitate Selected Reform Outcomes

Outcomes	Chi-Square Results
Improve Image	2.19
Increase Resources	3.20
Improve Quality of Programs	1.50
Improve Curriculum	7.61
Increase Student Quality	5.89
Increase Number of Qualified Instructors	3.21
Increase Collaboration, Cooperation, and Communication Between Stakeholders	12.85*
Increase Guidance Services	4.50
Increase Enrollments	2.54

* Indicates significance
 Alpha Value = .05
 Degree of Freedom = 4
 Critical Value = 9.488

As shown in Table 13, a majority of the 241 subjects who answered, 37.8 percent, responded that increased flexibility of T&I programs would increase the collaboration, cooperation, and communication between T&I stakeholders “some.”

The Importance Of Each Of The Selected Reform Outcomes To Vocational Administrators

Research question seven examined the personal importance administrators placed on selected outcomes. These results are presented in Table 14.

Administrator responses to the question of personal importance were analyzed using descriptive statistical analysis. The mean responses ranged from 2.75 for the outcome “increase number of qualified instructors” to 3.63 for the outcome “improve quality of programs.” “Improve quality of programs” had the highest mean response ($\underline{M}=3.63$) and the second smallest standard deviation ($\underline{SD}=.601$).

The Importance Of Each Of The Selected Reform Outcomes To T&I Instructors

Table 15 presents information concerning instructor responses to the degree of personal importance placed on selected outcomes. Mean responses for instructors were relatively high ranging from 2.90 for the outcome “increase number of qualified instructors” to 3.68 for the outcome “increase student quality.” Increasing student quality would seem to be the most important to instructors as a result of having the highest mean response ($\underline{M}=3.68$) as well as the smallest variability ($\underline{SD}=.533$).

The Extent Of Agreement Between Vocational Administrators And T&I Instructors On The Importance of Selected Reform Outcomes

A chi-square statistical analysis was used to answer research question nine. Nine separate crosstabulation tables were constructed and chi-square analyses were performed for the purpose of testing the relationship between the position held by the respondents in vocational education (i.e., instructor or administrator) and their beliefs

Table 13

Degree to Which Increased Flexibility of T&I Programs Would Increase the Collaboration, Cooperation, and Communication Between T&I Stakeholders by Respondent Position

		Not At All	A Little	Some	Quite A Bit	A Lot	Total
		1	2	3	4	5	
Instruc.	Count	3	31	55	33	7	129
	Row Percent	2.3	24.0	42.6	25.6	5.4	100.0
	Column Percent	30.0	67.4	60.4	40.7	53.8	53.5
	Expected Value	5	25	49	43	7	129
	Chi Square	1.0	1.7	0.8	2.5	0.0	6.0
	<hr/>						
	Admin.	Count	7	15	36	48	6	112
Row Percent		6.3	13.4	32.1	42.9	5.4	100.0
Column Percent		70.0	32.6	39.6	59.3	46.2	46.5
Expected Value		5	21	42	38	6	112
Chi Square		1.2	1.9	0.9	2.8	0.0	6.9
<hr/>							
Total		Count	10	46	91	81	13	241
	Row Percent	4.1	19.1	37.8	33.6	5.4	100.0
	Column Percent	100.0	100.0	100.0	100.0	100.0	100.0
	Expected Value	10	46	91	81	13	241
	Chi Square	2.2	3.6	1.7	5.3	0.0	12.9

Table 14

The Degree of Personal Importance of Selected Outcomes to Administrators*

Outcome	Mean	Standard Deviation	Median	Mode	N =
Improve Image	3.51	0.656	3.66	4	111
Increase Resources	3.32	0.723	3.39	4	111
Improve Quality of Programs	3.63	0.601	3.77	4	111
Improve Curriculum	3.59	0.592	3.71	4	111
Increase Student Quality	3.52	0.749	3.73	4	110
Increase Number of Qualified Instructors	2.75	0.858	2.76	3	111
Increase Collaboration, Cooperation, & Communication Between Stakeholders	3.42	0.666	3.53	4	111
Increase Guidance Services	3.42	0.693	3.53	4	111
Increase Enrollments	3.37	0.722	3.51	4	111

* Scale
 1 = Not Important
 2 = Somewhat Important
 3 = Important

4 = Very Important

Table 15

The Degree of Personal Importance of Selected Outcomes to Instructors*

Outcome	Mean	Standard Deviation	Median	Mode	N =
Improve Image	3.58	0.556	3.68	4	128
Increase Resources	3.54	0.614	3.67	4	128
Improve Quality of Programs	3.59	0.569	3.70	4	128
Improve Curriculum	3.45	0.686	3.60	4	128
Increase Student Quality	3.68	0.533	3.79	4	127
Increase Number of Qualified Instructors	2.90	0.831	2.93	3	128
Increase Collaboration, Cooperation, & Communication Between Stakeholders	3.27	0.672	3.29	3	128
Increase Guidance Services	3.50	0.640	3.63	4	128
Increase Enrollments	3.49	0.699	3.66	4	128

* Scale
 1 = Not Important
 2 = Somewhat Important
 3 = Important

4 = Very Important

regarding the importance of the nine outcomes. None of the relationships were found to be statistically significant at the .05 level. These results are reported in Table 16.

The Overall Climate For The Adoption Of The Proposed Model

Tables 17 - 22 present information relating to research question ten. Research question ten examined the overall climate for the adoption of the proposed T&I reform model. After reviewing responses from both segments of the population (vocational administrators and T&I instructors), it was determined that because their responses were similar, both segments of the population could be combined to define the overall climate for reform in secondary T&I education. Responses for both groups were then merged into one file group and a descriptive statistical analysis was performed.

Table 17 presents information concerning administrators and instructors beliefs about the degree to which model implementation would achieve selected outcomes. The highest mean response ($\underline{M}=3.37$) was associated with the expectations that the model would result in "increased flexibility." The lowest mean response ($\underline{M}=2.88$) was for the outcome "increased cost effectiveness" which also was associated with the largest amount of variability ($\underline{SD}=1.019$).

Participants responses regarding the degree to which increased access to T&I programs would achieve selected outcomes is presented in Table 18. As a whole, participants seem less optimistic about the outcomes "increase number of qualified instructors" ($\underline{M}=2.82$) and "increase guidance services" ($\underline{M}=2.93$). The outcome "increase guidance services" had the second lowest mean response ($\underline{M}=2.93$) and the largest variability ($\underline{SD}=1.174$). The highest mean response ($\underline{M}=3.51$) was for the outcome "improve image." This outcome was also associated with the second smallest standard deviation ($\underline{SD}=.967$).

Table 16
Relationship of Responses Between Administrators and Instructors Concerning Their
Expectations That Increased Cost Effectiveness Would Facilitate Selected Reform Outcomes

Outcomes	Chi-Square Results
Improve Image	4.81
Increase Resources	1.81
Improve Quality of Programs	2.90
Improve Curriculum	3.66
Increase Student Quality	3.65
Increase Number of Qualified Instructors	4.36
Increase Collaboration, Cooperation, and Communication Between Stakeholders	6.39
Increase Guidance Services	7.66
Increase Enrollments	7.50

Alpha Value = .05
 Degrees of Freedom = 4
 Critical Value = 9.488

Table 17

Combined Administrator and Instructor Beliefs Regarding the Degree to Which Model Implementation Would Achieve the Selected Outcomes

Outcome	Mean	Standard Deviation	Median	Mode	N =
Increased Access	3.17	.900	3.19	3	242
Increased Flexibility	3.37	.908	3.43	4	242
Increased Cost Effectiveness	2.88	1.019	2.92	3	240

Table 18

Combined Administrator and Instructor Beliefs Regarding the Degree to Which Increased Access to T&I Programs Would Achieve the Following Selected Outcomes

Outcome	Mean	Standard Deviation	Median	Mode	N =
Improve Image	3.51	.967	3.59	4	241
Increase Resources	3.10	1.062	3.13	3	241
Improve Quality of Programs	3.38	1.055	3.56	4	241
Improve Curriculum	3.39	1.020	3.54	4	241
Increase Student Quality	3.27	1.078	3.41	4	241
Increase Number of Qualified Instructors	2.82	1.027	2.90	3	238
Increase Collaboration, Cooperation, & Communication Between Stakeholders	3.16	.976	3.25	3	241
Increase Guidance Services	2.93	1.174	2.97	3	241
Increase Enrollments	3.32	.924	3.31	3	240

Participants beliefs about the degree to which increased flexibility of T&I programs would achieve selected outcomes is reported in Table 19. The mean responses ranged from 2.65 for outcome “increase number of qualified instructors” to 3.33 for the outcome “increase student quality.” The outcome “increase student quality” was closely followed by the outcomes “improve quality of programs” ($\underline{M}=3.32$), “increase enrollments” ($\underline{M}=3.31$), and “improve image” ($\underline{M}=3.28$).

The combined administrator and instructor beliefs about the degree to which increased cost effectiveness of T&I programs would achieve selected outcomes are presented in Table 20. Again, the outcome “increase number of qualified instructors” had the lowest mean response ($\underline{M}=2.51$). Eight of the nine outcomes have a mean response of 3.0 or less. It must also be pointed out that all nine outcomes have a standard deviation greater than 1.0. The outcome “increase guidance services” for example was associated with a mean response of 2.71 and a standard deviation of 1.151.

The overall climate for change is and will be highly affected by the importance participants place on selected outcomes. These results are presented in Table 21. The mean responses range from 2.83 for the outcome “increase number of qualified instructors” to 3.61 for the outcomes “improve quality of programs” and “increase student quality.” The variability ranges from .583 for the outcome “improve quality of programs” to .845 for “increase number of qualified instructors.” Noticeably, the lowest mean response ($\underline{M}=2.83$) and the largest amount of variability ($\underline{SD}=.845$) occurred for the outcome “increase number of qualified instructors.”

Table 19

Combined Administrator and Instructor Beliefs Regarding the Degree to Which Increased Flexibility to T&I Programs Would Achieve the Following Selected Outcomes

Outcome	Mean	Standard Deviation	Median	Mode	N =
Improve Image	3.28	.948	3.29	3	242
Increase Resources	2.93	1.023	2.97	3	242
Improve Quality of Programs	3.32	1.012	3.43	4	238
Improve Curriculum	3.23	1.091	3.35	4	238
Increase Student Quality	3.33	1.024	3.37	3	240
Increase Number of Qualified Instructors	2.65	1.076	2.78	3	240
Increase Collaboration, Cooperation, & Communication Between Stakeholders	3.17	.940	3.21	3	241
Increase Guidance Services	2.88	1.100	2.88	3	242
Increase Enrollments	3.31	.947	3.29	3	239

Table 20

Combined Administrator and Instructor Beliefs Regarding the Degree to Which Increased Cost Effectiveness to T&I Programs Would Achieve the Following Selected Outcomes

Outcome	Mean	Standard Deviation	Median	Mode	N =
Improve Image	2.91	1.054	2.95	3	238
Increase Resources	2.93	1.045	2.95	3	237
Improve Quality of Programs	3.03	1.052	3.09	3	236
Improve Curriculum	2.92	1.098	3.00	3	237
Increase Student Quality	2.79	1.111	2.90	3	235
Increase Number of Qualified Instructors	2.51	1.052	2.59	3	237
Increase Collaboration, Cooperation, & Communication Between Stakeholders	2.92	1.032	2.97	3	236
Increase Guidance Services	2.71	1.151	2.76	3	239
Increase Enrollments	2.94	1.104	3.04	3	235

Table 21

Combined Administrator and Instructor Beliefs Regarding the Degree of Personal Importance of Selected Outcomes*

Outcome	Mean	Standard Deviation	Median	Mode	N =
Improve Image	3.55	.604	3.67	4	241
Increase Resources	3.44	.675	3.56	4	241
Improve Quality of Programs	3.61	.583	3.73	4	241
Improve Curriculum	3.52	.646	3.66	4	241
Increase Student Quality	3.61	.646	3.76	4	238
Increase Number of Qualified Instructors	2.83	.845	2.85	3	239
Increase Collaboration, Cooperation, & Communication Between Stakeholders	3.34	.672	3.39	4	241
Increase Guidance Services	3.46	.665	3.59	4	240
Increase Enrollments	3.44	.711	3.59	4	241

* Scale 1 = Not Important

2 = Somewhat Important
3 = Important
4 = Very Important

Both the administrator and instructor questionnaires concluded with an open-ended question asking respondents to “list any additional comments they might have concerning the possible implementation of the proposed T&I reform model.” Table 22 summarizes administrator and instructor responses concerning the T&I reform model. Fifty-five of 120 participating administrators (45.8%) and 38 of 129 participating instructors (29.5%) included comments.

Scheduling appeared to be the primary area of concern. Twelve administrators and 17 instructors made some type of comment regarding scheduling. These responses ranged from the need to increase 3 hour class blocks to the inability of area vocational centers to schedule transportation. Instructors also listed students (18 respondents) as a concern compared to only three administrators. The additional comments section leads one to surmise that there is a relatively good climate for change in secondary T&I programs in Virginia.

Chapter Summary

The findings presented in this chapter related to the question of the overall climate for reform in secondary T&I programs in Virginia. The response rate was 83% for administrators and 43.7% for instructors.

The study addressed three basic themes. It examined whether vocational administrators (administrators) and T&I instructors (instructors) believe that implementation of the proposed T&I reform model would be likely to increase access to, flexibility of, or cost effectiveness of T&I programs. The study also examined the degree of personal importance administrators and instructors place on selected outcomes. Both segments of the population were asked if they believe that implementation of the proposed model would produce the desired outcomes. Responses for both segments of the population were similar. A slight exception were administrator beliefs

Table 22

Administrator and Instructor Comments Concerning the Proposed T&I Reform Model

Areas of Concern	Administrators	Instructors
	Number of Respondents	
Business / Industry	1	5
Career Preparation	4	2
Funding	3	8
Guidance	3	7
Image	6	7
Instructors	8	8
Parents	2	1
Scheduling	12	17
State Involvement	2	2
Students	3	18
Transportation	6	2

regarding the outcome “increased access.” Their responses were somewhat lower than for instructors. Mean responses for the outcome “increased cost effectiveness” were under 3.0 for both sub-groups (administrators = 2.87 and instructors = 2.88).

Administrators were asked the extent of their belief that increasing access to, flexibility of, and cost effectiveness of T&I programs would facilitate selected reform outcomes. The outcome “increase resources” was not believed likely to be affected by increased access, increased flexibility, or increased cost effectiveness. Likewise, increased access to, increased flexibility, and increased cost effectiveness were not believed likely to “increase the number of qualified instructors.”

Instructors were also asked the extent of their belief that increasing access to, flexibility of, and cost effectiveness of T&I programs would facilitate selected reform outcomes. Instructor beliefs regarding the extent that increased cost effectiveness would achieve selected outcomes was not strong. Nine of the ten outcomes resulted in a mean response less than 3.0. The outcomes “improve image” and “increase enrollments” were believed to be most likely affected.

The personal importance placed on selected reform outcomes by administrators and instructors were both examined. Administrator responses ranged from 2.75 for the outcome “increase number of qualified instructors” to 3.63 for the outcome “improve quality of programs.” Mean responses for instructors ranged from 2.90 for the outcome “increase number of qualified instructors” to 3.68 for the outcome “increase student quality.” The outcome “increase number of qualified instructors” was believed least likely to be affected by the proposed changes by both administrators and instructors.

Chapter Five

Summary, Discussion, and Recommendations

This study investigated the climate for change in secondary trade and industrial (T&I) education programs in Virginia. Chapter five presents information concerning this study in three sections. The first section is a summary of the investigation. The second section presents the discussion. The third and final section presents recommendations for practice and for further research.

Summary

Secondary trade and industrial education programs have and will continue to change as the new millennium approaches. Secondary T&I programs have been impacted by reforms aimed at general education and vocational education in general as well as those more specifically aimed at T&I education. Phelps and Johnson (1991) summarized that the economic, technological, demographic, and social changes facing the education and employment communities between now and the year 2001 are both enormous and complex.

The educational system is facing many challenges. Among these are changes in technology and in the social and political climate. It is not enough to be well versed in one occupational or technical area; the employee of the future will be expected to contribute in a number of new and innovative ways. Bracey (1994) concluded that “while education is at best tenuously linked to the well-being of the nation, it has become even more important to the well-being of the individual” (p. 117).

In an effort to improve the well being of the nation and the individual, the education system must be examined. Education reform has become a major topic of discussion in recent years. Scholars, educators, government officials, and countless others have proposed many definitions. Koppich (1990) defined education reform as a synonym for change. She indicates that reform is a response to a demand for change and that educational reform movements are in their root a political process. Darling-Hammond (1993) concluded, “School reform efforts must focus on building the capacity of schools and teachers to undertake tasks they have never before been called upon to accomplish. Schools and teachers must work to ensure that all students learn to think critically, to invent, to produce, and to solve problems” (p. 758).

Theoretical Framework

Motivation is an abstract term. Different individuals define motivation in many different ways. Atkinson (1964) reported that a major difficulty in defining motivation occurs because the term has no single fixed meaning in contemporary psychology. Steers and Porter (1979) found three components that are part of most definitions of motivation. These were energizing human behavior, directing or channeling behavior, and maintaining and sustaining behavior. Hoy and Miskel (1982) combined these components to define motivation as, “the complex forces, drives, needs, tension states, or other mechanisms that start and maintain voluntary activity toward the achievement of personal goals” (p. 137).

Victor Vroom’s expectancy motivation model may provide a rationale for explaining the adoption or initiation of education reform. Vroom’s work is documented in his 1964 book, Work and Motivation. His early work was built on the work of Lewin (1939) and Tolman (1959). Radelet (1993) summarizes that Vroom’s “theory asserts that a person is motivated to act in a certain way for rational reasons which are a combination of expectancies (how much I expect that I can successfully perform actions which will bring rewards), valences (how much I value the rewards which may stem from my actions), and instrumentalities (how certain I feel that the rewards I value will result from my actions)” (p. 8-9).

Expectancy theory (Vroom, 1964) hypothesizes that motivation is a conscious, rational process involving three ideas which a person evaluates when making a decision. These ideas are expectancy, instrumentality, and valence. Farr and Middlebrooks (1990) explain the advantages of using expectancy theory to predict behavior:

Expectancy theory does not attempt to specify the individual characteristics that affect motivation or the outcomes people see as a result of their behavior. It only describes the process by which an individual is motivated. This focus on process of motivation gives expectancy theory an advantage over motivational theories that prescribe that everyone should be motivated to achieve similar outcomes. Thus, expectancy theory can easily account for individual differences, while not ruling out the possibilities that certain outcomes or rewards may not be important for many. Therefore, expectancy theory assumes that choice behavior is a subjective process, one that is systematic at the level of the individual -- meaning that the individual always chooses that alternative that he or she expects to yield maximum payoff (p. 198).

Purpose

The purpose of this study was to assess the climate for the adoption of a proposed reform model for secondary T&I education in Virginia. The factors that precipitate the adoption of a new delivery model for T&I education were measured by using an instrument developed specifically for this study. More specifically, answers were sought to the following questions:

1. To what extent do vocational administrators believe that implementing the new T&I reform model would increase access to, flexibility of, and cost effectiveness of T&I programs?
2. To what extent do T&I instructors believe that implementing the new T&I reform model would increase access to, flexibility of, and cost effectiveness of T&I programs?
3. To what extent do vocational administrators' and T&I instructors' expectations agree or disagree that implementing the new T&I reform model would increase access to, flexibility of, and cost effectiveness of T&I programs?
4. To what extent do vocational administrators believe that increasing access to, flexibility of, and cost effectiveness of T&I programs would facilitate selected reform outcomes?
5. To what extent do T&I instructors believe that increasing access to, flexibility of, and cost effectiveness of T&I programs would facilitate selected reform outcomes?
6. To what extent do vocational administrators' and T&I instructors' expectations agree or disagree that increasing access to, flexibility of, and cost effectiveness of T&I programs would facilitate selected reform outcomes?
7. How important are each of the selected reform outcomes to vocational administrators?
8. How important are each of the selected reform outcomes to T&I instructors?
9. To what extent do vocational administrators and T&I instructors agree or disagree on the importance of the selected reform outcomes?
10. What is the climate for the adoption of the proposed model?

Population

The population of this study included two sub-groups: secondary vocational administrators and secondary T&I instructors. Questionnaires were mailed to 145 vocational

administrators (administrators) identified from a list provided by the VADOE. Responses were received from 120 administrators (83%).

The second segment of the population was comprised of T&I instructors (instructors) from selected secondary schools across Virginia. These instructors were selected in an effort to ensure representation from urban, suburban, and rural areas. An attempt was also made to ensure geographic representation. Two-hundred-ninety-five questionnaires were mailed to vocational administrators from selected school divisions for distribution to instructors. Responses were received from 129 instructors (43.7%).

Data Collection

Each of the 145 vocational administrators was mailed a cover letter, a summary of the proposed T&I reform model, a questionnaire, and a pre-addressed stamped envelop. One week after the questionnaire was mailed, a follow-up letter was sent thanking them for completing the questionnaire and/or reminding them to return the questionnaire. Three weeks later an additional follow-up correspondence was sent including a cover letter, summary of the proposed T&I model, a questionnaire, and a pre-addressed stamped envelop. Subjects who had not responded in five weeks were contacted by telephone to prompt them to respond. Each was asked if they had their original questionnaire. Those needing replacement questionnaires were mailed a copy of the original packet of materials. An effort was also made to encourage them to complete and return the questionnaire.

Rather than select instructors directly, schools were selected to reflect the demographic characteristics of the state. Vocational administrators from the selected school divisions would be telephoned and asked if their schools would be willing to assist with the study. It was expected that many had previously completed the vocational administrator questionnaire. Each vocational administrator was supplied a brief description of the process, an estimate the time commitment required of their instructors, and an opportunity to ask questions.

Those agreeing to participate were mailed a cover letter describing the process and packets to be distributed to T&I instructors. These packets included a cover letter, a summary of the proposed model, and a pre-addressed stamped envelop. Two-hundred-ninety-five questionnaires were distributed. One-hundred-twenty-nine total completed questionnaires were received. This resulted in an overall response rate for T&I instructors of 43.7 percent.

Findings

The findings presented in this study relate to the question of the overall climate for reform in secondary T&I programs in Virginia. The response rate was 83 % for administrators and 43.7 % for instructors.

The study addressed three basic themes. It examined whether vocational administrators and instructors believed that implementation of the proposed model would be likely to increase access to, flexibility of, or cost effectiveness of T&I programs. The extent to which administrators and instructors believed that increasing access, flexibility, and cost effectiveness would affect selected outcomes was also investigated. Finally, the study examined the degree of personal importance administrators and instructors place on selected outcomes.

Both segments of the population were asked if they believed that implementation of the proposed model would produce the desired characteristics of increasing access to, flexibility of, and cost effectiveness of T&I programs. Responses from both segments of the population were similar. A slight exception was administrators' responses for the characteristic "increased access." Their responses were somewhat lower than were instructors'. Neither group believed that cost effectiveness would likely be much improved by implementation of the model, mean scores for both groups were less than 3.0.

Administrators were asked the extent of their belief that increasing access to, flexibility of, and cost effectiveness of T&I programs would facilitate selected reform outcomes. In general, administrators believed some reform outcomes less likely to be affected by increased access, flexibility, or cost effectiveness than others. Specifically, they believed it less likely that resources will increase or the number of qualified instructors will increase merely as a result of implementation of the proposed model.

Similarly, instructors were asked the extent of their belief that increasing access to, flexibility of, and cost effectiveness of T&I programs would facilitate selected reform outcomes. Instructor responses were optimistic for all outcomes except the extent increased cost effectiveness would achieve selected outcomes. Instructors, like administrators, did not show strong support concerning the likelihood of model implementation increasing cost effectiveness.

The personal importance placed on selected reform outcomes by administrators and instructors were also examined. Administrator responses ranged from 2.75 for the outcome

“increase number of qualified instructors” to 3.63 for the outcome “improve quality of programs.” Mean responses for instructors ranged from 2.90 for the outcome “increased number of qualified instructors” to 3.68 for the outcome “increase student quality.” The outcome “increase number of qualified instructors” was least important for both administrators and instructors.

The overall climate for the adoption of the proposed T&I reform model was examined. After reviewing responses from both segments of the population, it was determined that administrator and instructor responses were similar and could be combined to explain the overall climate for reform in secondary T&I education.

The combined groups’ responses were similar to the responses of the individual sub-populations. The combined groups’ responses indicated that they valued the outcomes “improve image,” increase the quality of students,” and “increase the quality of programs.” Overall, the combined groups’ responses reinforced the earlier findings that there is a positive climate for change in secondary T&I programs in Virginia.

Discussion

This study has examined the climate for change concerning secondary T&I education in Virginia. On first thought, one would think that the climate for change would not be favorable. Historically, T&I instructors have not been receptive to new innovations or delivery models. They have often been accused of attempting to keep their programs at the status quo.

Surprisingly, there is similar belief between both groups that implementation of the proposed T&I reform model would result in increased access, flexibility, and cost effectiveness. Both groups were optimistic that access and flexibility would be increased with slightly less optimism being shown for increased cost effectiveness.

Similarities resulted in how both groups responded to the personal importance they place on selected reform outcomes. Both groups were optimistic that outcomes dealing with “quality” issues (improve quality of programs and increase student quality) would be improved as a result of model implementation. Both groups responded favorably that the image of T&I programs would also be improved by implementation of the proposed T&I reform model.

One possible difference identified was how model characteristics of increasing access to, flexibility of, and cost effectiveness of T&I programs would affect a particular outcome. Administrators hold favorable opinions that curriculum would be improved by model

implementation. Instructors, on the other hand, were not optimistic curriculum would be improved by model implementation.

As a whole, both sub-groups appeared to be receptive to change. Several general themes became clear. First, instructors' main focus was on increasing the quality and number of students. Administrators' main focus was on improving the quality of programs. An argument can be made that both the instructors and administrators are stressing the same idea. Instructors are likely see their students as the program. Administrators, on the other hand, view students as a component of the overall program, but may be more inclined to view the curriculum as the program. In either case, the combined group indicated a need to increase student quality and were optimistic that the proposed model would help achieve this goal.

The second theme that emerged related to increasing the number of qualified instructors. Neither instructors nor administrators believed that model implementation would achieve this outcome. Neither group placed a high level of personal importance on increasing the number of qualified instructors. Administrators have frequently expressed the need to improve the quality of available T&I instructors. Instructors have also expressed similar views. This may be a sign that the questionnaires did not do an adequate job of measuring the importance of increasing the number of qualified instructors or that respondents were unclear regarding how the model might affect instructor quality.

A third theme was in the area of personal importance administrators and instructors placed on selected reforms. As a whole, the combined group believed that the selected outcomes were important. This is positive and reinforces the conclusion that there is an overall positive climate for reform in secondary T&I programs in Virginia.

A fourth general theme that emerged was the need for grassroots involvement and two-way communication with the Virginia Department of Education. Arguably the support for this model is at least partly a result of the active role stakeholder groups had in its development. Through regional meetings and the dissemination of draft proposals groups were able to impact model development. This model, or any reform, will be more likely to be implemented and effective if an effort is made to seek input from those who will ultimately be affected. Only with commitment from localities can any proposed local reform become a reality.

Recommendations

Building on this study's findings and discussion, recommendations are offered for both practice and research. The recommendations for practice are given first, followed by research recommendations.

Recommendations for Practice

The results of this study have particular relevance to persons at the local, state, and university levels who work with secondary T&I programs. The findings from this study suggest there is a positive climate for reform in secondary T&I programs in Virginia. These findings suggest the perceived need for improvements in several practices.

First, the Virginia Department of Education should continue to identify better mechanisms of communication. This communication must be two-way and flexible. Examples might be the use of electronic mail, internet web pages, electronic newsletters, or regional forums. Individuals from local educational systems have indicated a willingness and in many cases an interest in improving secondary T&I programs. The state department of education should capitalize on this opportunity and take the appropriate actions to further involve stakeholders in future reform efforts.

Second, the Virginia Department of Education should provide resources to pilot-test the proposed T&I reform model in targeted localities across the Commonwealth. Pilot-test sites should be selected to ensure geographic and school-type diversity. Rural, suburban, and urban school settings should be included in any pilot-test efforts.

Third, the state department of education should also closely examine the degree of personal importance both administrators and instructors placed on selected reform outcomes. The combined group believed that the selected reform outcomes were important. The outcomes "improve student quality," improve quality of programs," and "improve image" all received strong support. Therefore, the impact of any proposed program changes on student quality, quality of programs, and program image locally and state-wide should be examined.

Recommendations for Further Research

Several recommendations for future research have emerged from this study. First is the need for evaluation of the processes and procedures associated with any pilot implementation of the proposed model. These processes and procedures should be evaluated for their affects on secondary T&I education but also their affects on secondary vocational education in general.

Second, the teacher preparation and continuing development component and the planning and evaluation component of the model should be further developed. Not only will these components assist in potential full-scale implementation, each will be a crucial part of any pilot implementation effort. This research should stress the importance of local involvement in the development or refinement of any model components.

Lastly, the instructional unit emphasis of the proposed T&I model should be applied to other service areas within vocational education. The basic goals of increasing access to, flexibility of, and cost effectiveness of programs do not apply only to T&I programs. Other service areas within vocational education could benefit as well.

REFERENCES

- Asche, F.M. (1989). Education reform and vocational education: Review with implications for research and development. Journal of Vocational Education Research, 33 (1), 1-34.
- Asche, F.M., O'Reilly, P.A., Rowland, B.K., & Waugh, C.K. (1995). Trade and industrial education in Virginia: Analysis of field reports of status, problems, and recommendations. Report two in the project: An analysis of trade and industrial education in Virginia and recommendations for improvement. Blacksburg, VA: Division of Vocational and Technical Education, Virginia Polytechnic Institute and State University.
- Atkinson, J.W. (1964) An introduction to motivation. New York: Van Nostrand Reinhold.
- Bacharach, S.B. (1990). Education reform. Boston: Allyn and Bacon.
- Barber, B.R. (1992). An aristocracy of everyone. New York: Ballentine.
- Barron, M. (1992). University involvement in public school restructuring. Record, 13, 18-21.
- Best, J.W. (1977). Research in education. Englewood Cliffs: Prentice-Hall.
- Boesel, D., & McFarland, L. (1994). National assessment of vocational education, final report, volume I., summary and recommendations. Washington, DC: U.S. Department of Education.
- Boesel, D., Hudson, L., Deich, S., & Masten, C. (1994). National assessment of vocational education, final report, volume II., participation and quality of vocational education. Washington, DC: U.S. Department of Education.
- Boschee, F. (1989). Has the United States lost its competitive edge or commitment? NASSP Bulletin, 73(517), 79-82.
- Bowers, D.A. (1988). Education reform in the 1980s: The media, public opinion, and elite policy-making. Unpublished doctoral dissertation, The University of Texas at Austin.
- Bracey, G.W. (1994). The fourth Bracey report on the condition of public education. Phi Delta Kappan, 76(2), 115-127.
- Camp, W.G., & Heath, B. (1988). On becoming a teacher. Berkeley, CA: National Center for Research in Vocational Education.
- Darling-Hammond, L. (1993). Reframing the school reform agenda: Developing capacity for school transformation. Phi Delta Kappan, 75(6), 753-761.
- Eisner, E.W. (1992). The federal reform of schools: Looking for the silver bullet. Phi Delta Kappan, 73(6), 745-752.

- Elmore, R.F. (1990). Restructuring schools. San Francisco: Jossey-Bass.
- Farr, J.L., & Middlebrooks, C.L. (1990). Enhancing motivation to participate in professional development. Maintaining professional competence. Approaches to career enhancement, vitality, and success throughout a worklife. San Francisco: Jossey-Bass. 195-213.
- Finn, C.E., & Rebarber, T. (1992). Education reform in the '90s. New York: Macmillan.
- Flanigan, J.L., Richardson, M.D., & Marion, R.A. (1991). The education reform bandwagon: Is it really a runaway train? Auburn: Southern Regional Council on Education Administration. (ERIC Document Reproduction Service No. ED 344 278).
- Glines, D., & Long, K. (1992). Transitioning toward educational futures. Phi Delta Kappan, 73, 557-560.
- Goens, G.A., & Clover, S. (1991). Mastering school reform. Boston: Allyn and Bacon.
- Goodlad, J.I., & Keating, P. (1990). Access to knowledge. New York: College Entrance Examination Board.
- Gross, T. (1988). Partners in education. San Francisco: Jossey-Bass.
- Harris, R.P. (1961). American education: Facts, fancies, and folklore. New York: Random House.
- Heffner, F.D. (1993). More said than done: The history of education reform in the United States from 1983 to 1993. Unpublished doctoral dissertation, The University of South Dakota.
- Howell, D. C. (1992). Statistical methods for psychology (3rd ed.). Belmont, CA: Duxbury Press.
- Hoy, H.C., & Miskel, C.G. (1982). Educational administration: Theory, research and practice. 2nd edition. New York: Random House.
- Issac, S., & Michael, W.B. (1990). Handbook in research and evaluation. San Diego: Edits Publishers.
- Jensen, M.C. (1986). Induction programs support new teachers and strengthen their schools. Eugene, OR: Oregon School Study Council. (ERIC Document Reproduction Service No. ED 273 012).
- Jobs For The Future. (1994). School to work opportunities act: What best practice programs have taught us about building a national system of work and learning. Boston, Mass: 1-6.

- Johnson, P.K. (1994). Factors that influence the professional updating of teachers. Unpublished doctoral dissertation, University of North Dakota, Grand Forks.
- Johnston, W.J. (1985). Education on trial. San Francisco: ICS Press.
- Koppich, J.E. (1990). Education reform as high politics: Toward a political theory of school reform movements. Unpublished Doctoral Dissertation, University of California at Berkeley.
- Leonard, G. (1984). The great school reform hoax. Esquire, 4, 47-56.
- Lewis, A.C. (1992). All together now: Building collaboration. Phi Delta Kappan, 73,(5), 348-349.
- Lewis, A.C. (1993). Direct from Washington. Tech Directions, 14, (11), 9-10.
- Long, R.E. (1991). The state of U.S. education. New York: H.W. Wilson Co.
- Lucas, C.J. (1984). Foundations of education. Englewood Cliffs: Prentice-Hall.
- O'Reilly, P.A., & Asche, F.M. (1992). A call for restructuring secondary school trade and industrial education. Occupational Education Forum, 20(2), 23-35.
- O'Reilly, P.A., Asche, F.M., & Rowland, B.K. (1996). Strategic plan for the improvement of trade and industrial education in Virginia. Report Four of the project: An analysis of trade and industrial education in Virginia and recommendations for improvement. Blacksburg, VA: Division of Vocational and Technical Education, Virginia Polytechnic Institute and State University.
- O'Reilly, P.A., Asche, F.M., Rowland, B.K., & Waugh, C.K. (1994). Trade and Industrial Education in Virginia: Enrollment Trends. Report one in the project: An analysis of trade and industrial education in Virginia and recommendations for improvement. Blacksburg, VA: Division of Vocational and Technical Education, Virginia Polytechnic Institute and State University.
- Phelps, A.L., & Johnson, D.R. (1991). Implications for future public policy. The Journal For Vocational Special Needs Education, 14(1), 33-37.
- Plawin, P. (1994). A national report card for vo-tech: Excerpts from NAVE, the federal government's national assessment of vocational education. Vocational Education Journal, 69(8), 43-49.
- Plawin, P. (1995). Teachers on vocational education. Vocational Education Journal, 70(1), 26-27.

- Provo, B.C. (1994). Predicting individual preference for gender dominated occupations: An application of expectancy theory. Unpublished doctoral dissertation, The California School of Professional Psychology, San Diego.
- Pulliam, J.D. (1991). History of education in America. New York: Macmillan.
- Radelet, J.R. (1993). Motivation and dropout prevention among urban high school students: Insights from testing an expectancy model. Unpublished doctoral dissertation, The University of Michigan, Ann Arbor.
- Rowland, B.K., O'Reilly, P.A., & Asche, F.M. (1995). Draft interim report for the improvement of T&I education in Virginia. Report three in the project: An analysis of trade and industrial education in Virginia and recommendations for improvement. Blacksburg, VA: Division of Vocational and Technical Education, Virginia Polytechnic Institute and State University.
- Schlechty, P. (1990). Schools for the twenty-first century. San Francisco: Jossey-Bass.
- Smith, B.L. (1994). Utilizing expectancy theory in an investigation of characteristics and career aspirations of women administrators in Georgia public schools. Unpublished doctoral dissertation, Georgia State University, Atlanta.
- Smith, F. (1986). Insult to intelligence. New York: Arbor House.
- Soltis, J.F. (1988). Reform or reformation? Educational Administration Quarterly, 24(3), 241-245.
- Spring, J. (1976). The sorting machine. New York: David McKay.
- Steers, R.M., & Porter, L.W. (1979). Motivation and work behavior, 2nd edition. New York: McGraw-Hill.
- Strickland, D. C., Elson, D. E., & Frantz, N. R. (1992). U.S. enrollment patterns in secondary vocational education: A status report (1983-1990). Berkeley, CA: National Center for Research in Vocational Education.
- Toch, T. (1991). In the name of excellence. New York: Oxford University Press.
- Vroom, V.H. (1964). Work and Motivation. Malabar, FL: Robert E. Krieger Publishing Company.
- Walberg, H.J. (1986). Rethinking reform: The principal's dilemma. Reston: NASSP Press.
- Williams, M.F. (1992). The effects of a career development program on teacher motivation. Unpublished doctoral dissertation, University of North Carolina, Chapel Hill.

Wirth, A.G. (1989). Toward a post-industrial intelligence and democratic renewal. Journal of Industrial Teacher Education, 27(1), 5-13.

Appendix A

Listing of Each County and City for Superintendent's Regions in Virginia

APPENDIX A

The following is a list of counties and cities in each Superintendent's Region.

REGION 1

Counties:	Cities:
Charles City	Colonial Heights
Chesterfield	Hopewell
Dinwiddie	Petersburg
Goochland	Richmond
Hanover	
Henrico	
New Kent	
Powhatan	
Prince George	
Surry	
Sussex	

REGION 2

Counties:	Cities
Accomack	Chesapeake
Isle of Wight	Franklin
Northampton	Hampton
Southampton	Newport News
York	Norfolk
	Poquoson
	Portsmouth
	Suffolk
	Virginia Beach
	Williamsburg/ James City

REGION 3

Counties:	Cities:
Caroline	Fredericksburg
Essex	Colonial Beach
Gloucester	West Point
King and Queen	
King George	
King William	
Lancaster	
Mathews	
Middlesex	
Northumberland	
Richmond	
Spotsylvania	
Stafford	
Westmoreland	

REGION 4

Counties:	Cities:
Arlington	Alexandria
Clarke	Fairfax
Culpeper	Falls Church
Fairfax	Manassas
Fauquier	Manassas Park
Frederick	Winchester
Loudoun	
Madison	
Orange	
Page	
Prince William	
Rappahannock	
Shenandoah	
Warren	

REGION 5

Counties:
Albemarle
Amherst
Appomattox
Augusta
Bath
Bedford
Campbell
Fluvanna
Greene
Highland
Louisa
Nelson
Rockbridge
Rockingham

Cities:
Bedford
Buena Vista
Charlottesville
Harrisonburg
Lexington
Lynchburg
Staunton
Waynesboro

REGION 6

Counties:
Alleghany Highlands
Botetourt
Craig
Floyd
Franklin
Henry
Montgomery
Patrick
Pittsylvania
Roanoke

Cities:
Covington
Danville
Martinsville
Roanoke
Salem

REGION 7

Counties:
Bland
Buchanan
Carroll
Dickenson
Giles
Grayson
Lee
Pulaski
Russell
Scott
Smyth
Tazewell
Washington
Wise
Wythe

Cities:
Bristol
Galax
Norton
Radford

REGION 8

Counties:
Amelia
Brunswick
Buckingham
Charlotte
Cumberland
Greenville/Emporia
Hallifax/South Boston
Lunenburg
Mecklenberg
Nottoway
Prince Edward

Appendix B
T&I Reform Project
General Administrator Questionnaire

Questionnaire One: Trade and Industrial Education Survey

Please Check One:

- a) _____ General School Administrator
- b) _____ Vocational Administrator
- c) _____ Counselor
- d) _____ T&I Teacher (Please specify occupational area: _____)
- e) _____ Vocational Advisory or Craft Committee Member

Directions: Please answer the following questions in terms of Trade and Industrial Education (T&I) Programs in your school, division, or center.

1. What changes have occurred in your school, division, or center that have helped or improved Trade and Industrial Education?

2. What changes have occurred in your school, division, or center that have made it more difficult to provide quality Trade and Industrial Education?

3. What do you consider to be the strongest or most positive features of the Trade and Industrial Education programs in your school, division, or center?
 - 1.
 - 2.
 - 3.

(Over Please for important questions)

4. What do you consider to be the three biggest concerns in Trade and Industrial Education at the present time in your school, division, or center?

1.

2.

3.

5. What do you feel are the three changes most needed to improve Trade and Industrial Education in your school, division, or center?

1.

2.

3.

6. What do you believe are the two most important challenges Trade and Industrial Education will face in your school, division or center within the next five years?

1.

2.

Other Comments: Please make any additional comments you feel may be helpful to the State Task Force on the Improvement of Trade and Industrial Education.

Thanks for your time and thoughtful responses to the above questions!

Appendix C

T&I Project

T&I Instructor Questionnaire

Questionnaire Two: T & I Teacher Questionnaire

Your cooperation in providing the following information will be greatly appreciated. Your answers will be kept confidential. Neither schools nor individuals will be identified.

1. What T & I program do you teach? _____
2. How many years did you work in the trade or occupation you teach? _____
3. What was the last year you worked full-time in your trade or occupation for longer than three months? _____
4. Have you ever attended an industry sponsored school or classes? ____yes ____ no
If yes, what year was the last time you attended such a school or class? _____
5. Please check your highest certificate, diploma, or degree: (Check only one)
 High School Diploma / GED
 Technical / Trade Certificate or Diploma
 Associate's Degree
 Bachelor's Degree
 Master's Degree
6. Which type of teaching certificate do you hold?
 Provisional Certificate
 Vocational Education Certificate (VEC)
 Collegiate Professional Certificate
7. How many years of teaching experience do you have? _____
8. How many years have you taught the trade or occupation you now teach? _____
9. How many more years do you plan to teach? _____

Thanks for taking the time to complete this questionnaire

Appendix D

Vocational Administrator Questionnaire

TRADE AND INDUSTRIAL EDUCATION ADMINISTRATOR QUESTIONNAIRE

As a leader in vocational education, you recognize the importance of continuing to improve secondary trade and industrial education in Virginia. For continued improvement, research in this area is important. You have been selected to participate in a study looking at a new delivery mode that is being proposed for the improvement of secondary trade and industrial education. As a valued stakeholder in vocational education, your assistance in this research endeavor is greatly appreciated. Your participation in this study will not only contribute to the body of knowledge concerning trade and industrial education, but will also provide valuable information for the possible improvement of secondary trade and industrial education in Virginia.

Thank you in advance for your participation and involvement in this research concerning secondary trade and industrial education in Virginia. Please know that your responses will be handled confidentially.

=====

1. If this model were implemented in your school system, how much would:

(Circle only one choice for each item.)

		Not At All	A Little	Some	Quite A Bit	A Lot
a. access to T&I programs increase?	1	2	3	4	5	
b. flexibility of T&I programs increase?	1	2	3	4	5	
c. cost effectiveness of T&I programs increase?	1	2	3	4	5	

2. How much would increased access to T&I programs:

(Circle only one choice for each item.)

		Not At All	A Little	Some	Quite A Bit	A Lot
a. improve the image of secondary T&I?	1	2	3	4	5	
b. increase resources available for T&I?	1	2	3	4	5	

c. improve the overall quality of T&I?	.....	1	2	3	4	5
					
d. improve the quality of curriculum available for T&I?	.....	1	2	3	4	5
					
e. increase the quality of T&I students?	.....	1	2	3	4	5
					
f. increase the number of qualified T&I instructors?	.....	1	2	3	4	5
					
g. increase the collaboration, cooperation, and communication between T&I stakeholders?	.....	1	2	3	4	5
					
h. increase the guidance services available for T&I students?	.....	1	2	3	4	5
					
i. increase enrollments in T&I?	.....	1	2	3	4	5
					

3. How much would increased flexibility of T&I programs:

(Circle only one choice for each item.)

		Not At All	A Little	Some	Quite A Bit	A Lot
a. improve the image of secondary T&I?	.....	1	2	3	4	5
					
b. increase resources available for T&I?	.....	1	2	3	4	5
					
c. improve the overall quality of T&I?	.....	1	2	3	4	5
					
d. improve the quality of curriculum available for T&I?	.....	1	2	3	4	5
					
e. increase the quality of T&I students?	.....	1	2	3	4	5
					
f. increase the number of qualified T&I instructors?	.....	1	2	3	4	5
					
g. increase the collaboration, cooperation, and communication between T&I stakeholders?	.....	1	2	3	4	5
					

h. increase the guidance services available for T&I students?	.....	1	2	3	4	5
	...					
i. increase enrollments in T&I?	.....	1	2	3	4	5
	...					

**4. How much would increased cost effectiveness of T&I programs:
(Circle only one choice for each item.)**

		Not At All	A Little	Some	Quite A Bit	A Lot
a. improve the image of secondary T&I?	....	1	2	3	4	5
	..					
b. increase resources available for T&I?	....	1	2	3	4	5
	..					
c. improve the overall quality of T&I?	....	1	2	3	4	5
	..					
d. improve the quality of curriculum available for T&I?	....	1	2	3	4	5
e. increase the quality of T&I students?	....	1	2	3	4	5
	..					
f. increase the number of qualified T&I instructors?	....	1	2	3	4	5
	..					
g. increase the collaboration, cooperation, and communication between T&I stakeholders?	....	1	2	3	4	5
					
	.					
h. increase the guidance services available for T&I students?	...	1	2	3	4	5
i. increase enrollments in T&I?	...	1	2	3	4	5

**5. How important are each of the outcomes to you personally:
(Circle only one choice for each item.)**

		Not Important	Somewhat Important	Important	Very Important
a. to improve the image of T&I?	. .	1	2	3	4
b. to increase resources available for T&I?	. .	1	2	3	4
c. to improve the quality of T&I?	. .	1	2	3	4
d. to improve the overall quality of curriculum available for T&I?	. .	1	2	3	4
e. to increase the quality of T&I students?	. .	1	2	3	4
f. to increase the number of T&I instructors?	. .	1	2	3	4
g. to increase the collaboration, cooperation, and communication between T&I stakeholders?	. .	1	2	3	4
h. to increase the guidance services available for T&I students?	. .	1	2	3	4
i. to increase enrollments in T&I?	. .	1	2	3	4

6. Please mark the appropriate response on the lines provided.

- a. Number of schools in which you have supervisory responsibility for vocational programs. _____
- b. How many instructors do you supervise? _____
- c. Approximate number of students enrolled in vocational programs. _____

d. Approximately what percentage are enrolled in T&I programs? _____ %

Appendix E

Demographic Information for Vocational Administrators and T&I Instructors

Vocational Administrator Responses to the Questionnaire

	N	Percent
Total Population	145	
Number of Responses	120	83
Non-Responses	25	17
Total Percentage		<u>100</u>

T&I Instructor Responses to the Questionnaire

	First Mailing		Second Mailing	
	N	Percent	N	Percent
Mailing	180		115	
Returns	57	31.6	72	62.6
Non-Respondents	123	66.6	43	37.4
Total Returns	129	43.7		
Total Non-Respondents	<u>166</u>	<u>56.3</u>		
Total Populations	295	100		

Note. Combined totals from mailing number one and two.

Number of Schools Administrator has Supervisory Responsibility

No. of Schools	No. of Respondents	Percent
1	39	34.2
2	23	20.2
3	10	8.7
4	13	11.4
5	1	.01
6	6	5.3
7	5	4.4
8	7	6.1
9	2	1.8
10	1	.01
11	3	2.6
13	1	.01
15	1	.01
20	1	.01
21	<u>1</u>	.01
Total Respondents	114	

Note. Total may not equal 100% as a result of rounding error.

Number of Instructors Supervised

No. of Instructors	No. of Respondents	Percent
5 or Less	13	11.9
6 - 15	27	24.7
16 - 30	26	23.9
31 - 50	23	21.1
51 - 100	18	16.5
101 or More	2	1.8
Total Respondents	109	

Note. Total may not equal 100% as a result of rounding error.

Number of Students Enrolled in Vocational Programs

No. of Students	No. of Respondents	Percent
100 or Less	4	3.7
101 - 250	11	10.3
251 - 400	19	17.8
401 - 700	12	11.2
701 - 1000	14	13.1
1001 - 1500	9	8.4
1501 - 3000	21	19.6
3001 - 7000	11	10.3
7001 or More	<u>6</u>	5.6
Total Respondents	107	

Note. Total may not equal 100% as a result of rounding error.

Approximate Percentage of Students Enrolled in T&I Programs

Percentage	No. of Respondents
10% or Less	34
11 - 22%	35
23 - 59%	18
60 - 79%	11
80% or More	<u>8</u>
Total Respondents	106

Note. Total may not equal 100% as a result of rounding error.

Current Job Title for Vocational Administrators

Job Title	No. of Respondents	Percent
Vocational Principal	10	9.8
Vocational Director	47	46.1
Vocational Coordinator	5	4.9
Vocational Supervisor	17	16.7
General Administrator	14	13.7
Other	<u>9</u>	8.8
Total Respondents	102	

Note. Total may not equal 100% as a result of rounding error.

Percentage of Time Supervising and Administering Vocational Programs

Percentage	No. of Respondents
24% or Less	15
25 - 49%	18
50 - 64%	18
65 - 99%	16
100%	<u>37</u>
Total Respondents	104

Note. Total may not equal 100% as a result of rounding error.

Years of Administrative Experience

Years Administrative Experience	No. of Respondents	Percent
5 or Less	29	26.1
6 - 10	19	17.1
11 - 20	30	27.0
21 - 25	17	15.3
26 - More	<u>16</u>	14.4
Total Respondents	111	

Note. Total may not equal 100% as a result of rounding error.

Years of Public School Teaching Experience

Years of Teaching Experience	No. of Respondents	Percent
5 or Less	18	16.1
6 - 10	21	18.8
11 - 15	14	12.5
16 - 25	27	24.1
26 or More	<u>32</u>	28.6
Total Respondents	112	

Note. Total may not equal 100% as a result of rounding error.

Highest Degree Achieved by Vocational Administrators

Highest Degree	No. of Respondents	Percent
A.S./A.A.	0	0
B.S./B.A.	9	8.0
M.S./M.A.	75	66.9
Ph.D./Ed.D.	19	16.9
Other ¹	<u>9</u>	8.0
Total Respondents		

Note. Total may not equal 100% as a result of rounding error.

1 = "Other" responses were primarily administrative certificates and education specialist degrees.

Administrator Age at Last Birthday

Age	No. of Respondents	Percent
25 or Less	1	.9
26 - 35	3	2.9
36 - 45	23	22.1
46 - 55	65	62.5
55 or More	<u>12</u>	11.5
Total Respondents	104	

Note. Total may not equal 100% as a result of rounding error.

Instructor's Schools Location

School Location	No. of Respondents	Percent
Urban Area	15	11.9
Suburban Area	45	35.7
Rural Area	<u>66</u>	52.4
Total Respondents	126	

Note. Total may not equal 100% as a result of rounding error.

Type of School in Which Instructors Currently Teach

School Type	No. of Respondents	Percent
Comprehensive High School	44	34.9
Area Vocational Center	74	58.7
Jointly-Owned Vocational Center	<u>8</u>	6.3
Total Respondents	126	

Note. Total may not equal 100% as a result of rounding error.

Vocational Enrollment at Instructors' School

Enrollment	No. of Respondents	Percent
25 or Less	10	8.9
26 - 59	21	18.8
60 - 199	10	8.9
200 - 399	27	24.1
400 - 699	23	20.5
700 - 1079	5	4.5
1080 or More	<u>16</u>	14.3
Total Respondents	112	

Note. Total may not equal 100% as a result of rounding error.

Percentage of Total Enrollment in T&I Programs

Percentage	No. of Respondents
40% or Less	9
41 - 69%	21
70 - 99%	35
100%	<u>39</u>
Total Respondents	104

Note. Total may not equal 100% as a result of rounding error.

Percentage of Regular High School Age T&I Students of Entire Population

Percentage	No. of Respondents
Less Than 74%	3
75 - 94%	8
95 - 99%	25
100%	<u>79</u>
Total Respondents	115

Note. Total may not equal 100% as a result of rounding error.

Teaching Area for T&I Instructors

Job Description	No. of Respondents	Percent
AC / Refrigeration	4	3.6
Automotive Areas	19	17.1
Construction Trades	13	11.7
Cosmetology	12	10.8
Culinary Arts	5	4.5
Drafting	7	6.3
Electrical	7	6.3
Electronics	6	5.4
Graphics	4	3.6
Masonry / Bricklaying	5	4.5
Metal Trades	2	1.8
Small Engine Repair	3	2.7
Welding	8	7.2
Other	<u>16</u>	14.4
Total Respondents	111	

Note. Total may not equal 100% as a result of rounding error.

Highest Level of Degree by T&I Instructors

Education Level	No. of Respondents	Percent
High School/G.E.D.	40	33.6
A.S./A.A.	23	19.3
B.S./B.A.	33	27.7
M.S./M.A.	13	10.9
Ph.D./Ed.D.	1	.8
Other ¹	<u>9</u>	7.6
Total Respondents	119	

Note. Total may not equal 100% as a result of rounding error.

1= “Other” responses were primarily business and industry certificates (such as automotive certifications) and apprenticeship certificates.

T&I Instructor Age at Last Birthday

Age	No. of Respondents	Percent
30 or Less	9	7.5
31 - 40	37	30.8
41 - 49	43	35.8
50 - 59	26	21.7
60 or More	<u>5</u>	4.2
Total Respondents	120	

Note. Total may not equal 100% as a result of rounding error.

Appendix F

Trade and Industrial Education Instructor Questionnaire

TRADE AND INDUSTRIAL EDUCATION INSTRUCTOR QUESTIONNAIRE

As a leader in vocational education, you recognize the importance of continuing to improve secondary trade and industrial education in Virginia. For continued improvement, research in this area is important. You have been selected to participate in a study looking at a new delivery mode that is being proposed for the improvement of secondary trade and industrial education. As a valued stakeholder in vocational education, your assistance in this research endeavor is greatly appreciated. Your participation in this study will not only contribute to the body of knowledge concerning trade and industrial education, but will also provide valuable information for the possible improvement of secondary trade and industrial education in Virginia.

Thank you in advance for your participation and involvement in this research concerning secondary trade and industrial education in Virginia. Please know that your responses will be handled confidentially.

=====

**1. If this model were implemented in your school system, how much would:
(Circle Only One Choice For Each Item)**

		Not At All	A Little	Some	Quite A Bit	A Lot
a. access to T&I programs increase?	1	2	3	4	5	
b. flexibility of T&I programs increase?	1	2	3	4	5	
c. cost effectiveness of T&I programs increase?	1	2	3	4	5	

**2. How much would increased access to T&I programs:
(Circle Only One Choice For Each Item)**

		Not At All	A Little	Some	Quite A Bit	A Lot
a. improve the image of secondary T&I?	...	1	2	3	4	5
	...					
b. increase resources available for T&I?	...	1	2	3	4	5
	...					
c. improve the overall quality of T&I?	...	1	2	3	4	5
	...					
d. improve the quality of curriculum available for T&I?	...	1	2	3	4	5
	...					
e. increase the quality of T&I students?	...	1	2	3	4	5
	...					
f. increase the number of qualified T&I instructors?	...	1	2	3	4	5
	...					
g. increase the collaboration, cooperation, and communication between T&I stakeholders?	...	1	2	3	4	5
	...					
	...					
h. increase the guidance services available for T&I students?	...	1	2	3	4	5
	...					
i. increase enrollments in T&I?	...	1	2	3	4	5
	...					

**3. How much would increased flexibility to T&I programs:
(Circle Only One Choice For Each Item)**

		Not At All	A Little	Some	Quite A Bit	A Lot
a. improve the image of secondary T&I?	.....	1	2	3	4	5
	...					
b. increase resources available for T&I?	.....	1	2	3	4	5
	...					
c. improve the overall quality of T&I?	.....	1	2	3	4	5
	...					
d. improve the quality of curriculum available for T&I?	.....	1	2	3	4	5

	...					
e. increase the quality of T&I students?	.....	1	2	3	4	5
	...					
f. increase the number of qualified T&I instructors?	.....	1	2	3	4	5
	...					
g. increase the collaboration, cooperation, and communication between T&I stakeholders?	.....	1	2	3	4	5
					
h. increase the guidance services available for T&I students?	.....	1	2	3	4	5
	...					
i. increase enrollments in T&I?	.....	1	2	3	4	5
	...					

**4. How much would increased cost effectiveness to T&I programs:
(Circle Only One Choice For Each Item)**

		Not At All	A Little	Some	Quite A Bit	A Lot
a. improve the image of secondary T&I?	.....	1	2	3	4	5
	...					
b. increase resources available for T&I?	.....	1	2	3	4	5
	...					
c. improve the overall quality of T&I?	.....	1	2	3	4	5
	...					
d. improve the quality of curriculum available for T&I?	.....	1	2	3	4	5
	...					
e. increase the quality of T&I students?	.....	1	2	3	4	5
	...					
f. increase the number of qualified T&I instructors?	.....	1	2	3	4	5
	...					
g. increase the collaboration, cooperation, and communication between T&I stakeholders?	.....	1	2	3	4	5
					
h. increase the guidance services available for T&I students?	.....	1	2	3	4	5
	...					
i. increase enrollments in T&I?	.....	1	2	3	4	5
	...					

**5. How important are each of the outcomes to you personally:
(Circle Only One Choice For Each Item)**

		Not Important	Somewhat Important	Important	Very Important
a. to improve the image of T&I?	. .	1	2	3	4
b. to increase resources available for T&I?	. .	1	2	3	4
c. to improve the quality of T&I?	. . ..	1	2	3	4
d. to improve the overall quality of curriculum available for T&I?	. . .	1	2	3	4
e. to increase the quality of T&I students?	. . .	1	2	3	4
f. to increase the number of T&I instructors?	. . .	1	2	3	4
g. to increase the collaboration, cooperation, and communication between T&I stakeholders?	. . .	1	2	3	4
h. to increase the guidance services available for T&I students?	. . .	1	2	3	4
i. to increase enrollments in T&I?	. . .	1	2	3	4

6. Please mark the appropriate response on the lines provided.

a. Where is your school located? _____ urban area _____ suburban area _____ rural area

b. What is the type of school in which you currently teach?

_____ Comprehensive High School _____ Area Vocational Center

_____ Jointly-Owned Vocational Center

- c. What is your approximate vocational enrollment? _____
- d. Approximately what percentage of these students are enrolled in T&I programs? _____ %
- e. What percentage of your T&I enrollees are:
_____ % regular high school students _____ % adults _____ %
business/industry trainees
- f. What trade area do you currently teach? _____
- g. Years of public school teaching experience. _____
- h. What is your highest degree?
_____ High School / G.E.D. _____ A.S./A.A. _____ B.S./B.A. _____
M.S./M.A.
_____ Ph.D./Ed.D. _____ Other (Please Specify:)

- i. What was your age at your last birthday? _____

7. Below, please list any additional comments you have concerning the possible implementation of the proposed T&I model.

**Thank you very much for your time and effort.
Please complete the questionnaire and drop it off as you leave the room.**

Appendix G

Vocational Administrator Cover Letter

316 Lane Hall
Virginia Tech
Blacksburg, Virginia 24061-0254

Month xx, 1996

Name
School Division
Address
City, State, Zip Code

Dear Name:

I am a doctoral student in Vocational and Technical Education at Virginia Tech conducting research on trade and industrial education under the direction of Dr. Patrick A. O'Reilly. The purpose of this study is to identify factors that precipitate the adoption of secondary trade and industrial reform. The study results will hopefully be useful in the future development of trade and industrial education programs.

As an administrator responsible for trade and industrial education you have been selected to participate in this study. Your participation is vital to its success of this study.

Enclosed is a summary of a new delivery model for trade and industrial education. The Programmatic Model has been developed to possibly reform trade and industrial education. Please take a few minutes to review the summary provided to familiarize yourself with the Programmatic Model. In addition, you will find a copy of the "***Trade and Industrial Education Questionnaire***." After reviewing the summary, please complete the questionnaire and return it in the pre-stamped envelop. The entire process should take less than 20 minutes.

You may notice a number pre-coded on the questionnaire. This is a control number that will be used to determine which respondents require a follow-up letter or call. All responses will be strictly confidential. No individual or school division will be identified in the study.

Thank you for your commitment to the continued improvement of trade and industrial education in Virginia. Your assistance and cooperation is appreciated. If you have any questions, please contact us at (540) 231-7741 or (540) 231-8204.

Sincerely,

Bryan K. Rowland
Principal Investigator

Patrick. A. O'Reilly
Dissertation Chair

enclosure

Appendix H
Summary of the Trade and Industrial
Education Reform Model

SUMMARY OF THE TRADE AND INDUSTRIAL EDUCATION REFORM MODEL

Reform is occurring in all levels of education. General education, vocational education, and even Trade and Industrial (T&I) education are being affected. Many factors are affecting this reform. Changes in the nature of work, advancements in technology, and enhanced requirements for today and tomorrow's workforce are just a few examples. Over the last few years, it has come to the attention of T&I stakeholders (administrators, instructors, business/industry, State Department of Education, parents, and students) that for T&I to continue to grow and prosper, reform or change is inevitable. As a result, a new delivery model for T&I has been developed.

Increasing access, flexibility, and cost effectiveness are the overall goals of the T&I Reform Model. These goals are defined as follows:

Access: Participation in T&I Programs by a wider variety of secondary and postsecondary students and adults.

Example: Enrollment in T&I programs by pre-engineering students or possibly by adults who are looking for further training or are exploring new careers.

Flexibility: The ability to modify program length, scheduling, occupational specificity, delivery mode/location, and personnel utilization.

Example: An expanded client base for T&I programs through greater scheduling and content flexibility. The flexibility to offer one-hour classes instead of the traditional three-hour blocks.

Cost Effectiveness: Maximizing program effectiveness for given outcomes within cost constraints.

Example: Elimination or reduction of duplication within and across programs and more efficient use of facilities and personnel. Another example could be the use of community college personnel or business/industry representatives to provide more advanced instruction.

The new model for T&I education consists of three separate, but related, components: the *Programmatic Component*, the *Teacher Education and Continuing Development Component*, and the *Planning and Evaluation Component*. Of the three components, the Programmatic Component is central because it provides the framework within which both teacher education/program planning and delivery/evaluation must be structured.

The Programmatic Component

The Programmatic Component is based upon an **instructional unit** approach to the organization and delivery of T&I programs and services. An instructional unit is as a logical combination of technical, skill, employability, and related academic competencies which is normally a subset of existing course content. Currently, T&I offerings are delivered using a program-based model which limits accomplishment of the three goals stated above. Dividing current programs into generally shorter instructional units and using those units and combinations of units as a basis for scheduling and delivering instruction has many advantages.

The three levels of instructional units in the programmatic component are based upon the need for all students to make informed choices about career and educational plans and to be prepared for continuing future education and training. The first level, *Orientation*, focuses on career exploration and assessment and assisting students in making tentative personal career and educational plans. The second level, *Cluster*, focuses on clusters of occupations traditionally classified as “trade and industrial” plus emergent service and information-based occupations. The cluster level includes two types of instructional units. First, are those units which encompass the basic core skills, attitudes, and knowledge common across a broad cluster of related occupations and second, those skills, attitudes, and knowledge specific to a single occupation or small number of closely related occupations. The final level, *Capstone*, includes specific, and often intensive, experiences tailored to the individual’s personal career and educational plan. A personal career and educational plan is developed by each student which includes an approved combination of academic courses, T&I instructional units/courses, and other local and state required courses and experiences. The Capstone level may be delivered through traditional in-school instruction and/or through various delivery alternatives such as joint enrollment in community college courses, pre-apprenticeship, cooperative plan with local businesses, or internships.

The Teacher Preparation and Continuing Development Component

The Teacher Preparation and Continuing Development Component is based on a decentralized, trainer-of-trainers delivery model. Beliefs central to this approach are:

- Both pedagogical and technical competence is required for effective T&I instruction,
- Teacher education services should be regionally accessible and affordable by both the state and the individual,
- The T&I teacher preparation and continuing development system should be designed to lead to a minimum of an Associate of Applied Science Degree with seamless progression to the Bachelor’s Degree, and
- The system should involve collaboration among selected universities, community colleges, vocational centers and programs as well as businesses and industries.

The Planning and Evaluation Component

The Planning and Evaluation Component is based on the belief that evaluation criteria must be keyed to program purposes and that evaluation for improvement is largely a local responsibility and activity. Localities may offer *standard programs* for which minimum requirements and objectives are agreed upon statewide and which have uniform curriculum guides and performance standards. Also, however, using instructional units, localities may propose for approval *innovative programs* specifically designed to meet local or regional needs. The evaluation criteria for such programs must consider the unique objectives and be developed jointly for a finite time period and are subject to formative evaluation requirements. Given successful implementation and evaluation, these programs will be considered for adoption as standard programs and made available to other localities.

Appendix I

Vocational Administrator Follow-Up Letter

(Reminder Letter)

Month xx, 1996 (1 week later)

Last week a questionnaire requesting your participation in a study of trade and industrial education was mailed to you. As a vocational administrator in Virginia selected for this study, your participation is vital to its success.

If you have already completed and returned the questionnaire, please accept my sincere thanks. If not, please complete it today and return it in the pre-stamped envelop provided.

If for some reason you did not receive the trade and industrial education questionnaire, or it was misplaced, please call me at (540) 231-7741 and I will send a questionnaire to you today.

Again, thank you for your help with this study of trade and industrial education in Virginia.

Sincerely,

Bryan K. Rowland
Principal Investigator

Appendix J

Second Vocational Administrator Follow-Up Letters

316 Lane Hall
Virginia Tech
Blacksburg, Virginia 24061-0254

Month xx, 1996 (three weeks later for non-respondents)

Dear Name:

About three weeks ago I wrote asking for your participation in a research study focusing on trade and industrial education in Virginia. At this point, I have not received a questionnaire back from you.

Your participation in this project is greatly appreciated. The study results will hopefully be useful in the development of future trade and industrial programs.

I am writing to you again to stress the importance of each questionnaire to this study. As a vocational administrator in Virginia selected for this study, your participation is vital to its success.

For your convenience, a summary of the programmatic model and a trade and industrial education questionnaire are included. Would you please take a few minutes to review the summary, complete the questionnaire, and return it in the pre-stamped envelop. It is very important that all questionnaires be returned.

Thank you for your participation in this research project. Your help is greatly appreciated. If you have any questions, please contact me at (540) 231-7741.

Sincerely,

Bryan K. Rowland
Principal Investigator

316 Lane Hall
Virginia Tech
Blacksburg, Virginia 24061-0254

Month xx, 1996 (three weeks later as thank-you)

Dear Name:

About three weeks ago I wrote asking for your participation in a research study focusing on trade and industrial education in Virginia. Thank you very much for the prompt return of your questionnaire. The success of this study is the direct result of dedicated vocational administrators like your self.

Again, thank you for your participation in this research project. If you have any questions, please contact me at (540) 231-7741.

Sincerely,

Bryan K. Rowland
Principal Investigator

Appendix K

Vocational Administrator Cover Letter
for T&I Questionnaire Distribution

TO:

FROM: Bryan K. Rowland

SUBJECT: Questionnaire Assistance

DATE: October 1996

Thank you for agreeing to help me with data collection for T&I instructors. As I indicated on the telephone, this is the last portion of my dissertation to be completed. Your time and help are **greatly** appreciated.

I have enclosed several packets. Each packet contains a cover letter, summary of the proposed model, and questionnaire. It should take less than 20 minutes for your instructors to complete the entire task. No attempt will be made to identify individual respondents. Data will be reported by "Superintendent's Region" only.

If possible, please distribute the questionnaires at a teachers meeting or other organized gathering. I have found those that follow this process are most successful. Please return the completed questionnaires in the enclosed envelop. If possible, please return the questionnaires by November 6, 1996. If everything goes as planned, I will complete my study prior to the holiday season.

Again, thank you for assisting me with this process. Your responses are essential in my completing the dissertation process. If you have questions, please contact me at (540) 231-3391.

Best regards.

enclosure(s)

Appendix L

T&I Instructor Questionnaire Cover Letter

TO: Virginia Trade and Industrial Instructors

FROM: Bryan K. Rowland

SUBJECT: Study of T&I Reform in Virginia

DATE: June 15, 1996

Dr. Patrick O'Reilly and I are conducting research regarding the reform of trade and industrial (T&I) education. The purpose of this research is to assess the climate for the adoption of a proposed reform model for T&I in Virginia. The research results will be useful in the future development of T&I education programs.

You have been selected to participate in this study because you are a T&I instructor. You have been selected because any proposed changes to T&I programs would ultimately affect you and your programs most. As a result, we are very interested in your views regarding the proposed model. Your participation is vital to the success of this study.

Enclosed is a summary of a proposed delivery model for T&I education and a copy of the "***Trade and Industrial Education Instructor Questionnaire***." Please take a few minutes to review the summary provided to familiarize yourself with the proposed T&I Reform Model. After reviewing the summary, please complete the questionnaire and return it in the pre-addressed envelop that has been provided. The entire process should take less than 20 minutes.

All responses will be strictly confidential. No individual or school division will be identified in the study.

Thank you for your commitment to the continued improvement of T&I education in Virginia. Your assistance and cooperation is appreciated. If you have any questions, please contact us at (540) 231-3391.

enclosure(s)

Appendix M

Revised T&I Instructor Questionnaire Cover Letter

TO: Virginia Trade and Industrial Instructors

FROM: Bryan K. Rowland

SUBJECT: Study of T&I Reform in Virginia

DATE: October 24, 1996

Dr. Patrick O'Reilly and I are conducting research regarding the reform of trade and industrial (T&I) education. The purpose of this research is to assess the climate for the adoption of a proposed reform model for T&I in Virginia. The research results will be useful in the future development of T&I education programs.

You have been selected to participate in this study because you are a T&I instructor. You have been selected because any proposed changes to T&I programs would ultimately affect you and your programs most. As a result, we are very interested in your views regarding the proposed model. Your participation is vital to the success of this study.

Enclosed is a summary of a proposed delivery model for T&I education and a copy of the "***Trade and Industrial Education Instructor Questionnaire***." Please take a few minutes to review the summary provided to familiarize yourself with the proposed T&I Reform Model. After reviewing the summary, please complete the questionnaire and return it to the individual who distributed it. The entire process should take less than 20 minutes.

All responses will be strictly confidential. No individual or school division will be identified in the study.

Thank you for your commitment to the continued improvement of T&I education in Virginia. Your assistance and cooperation is appreciated. If you have any questions, please contact us at (540) 231-3391.

enclosure(s)

VITA

of

BRYAN K. ROWLAND

EDUCATION

Doctor of Philosophy, Educational Leadership and Policy Studies. Virginia Polytechnic Institute and State University (Virginia Tech), Blacksburg, Virginia. Concentration in Educational Policy and Training and Development. May 97.

Master of Science, College of Education -- Workforce Education and Development. Southern Illinois University, Carbondale, Illinois. Concentration in Training and Development. May 1993.

Bachelor of Arts, Liberal Arts and Sciences. University of Illinois, Urbana-Champaign, Illinois. Concentration in Speech Communication. May 1991.

PROFESSIONAL EXPERIENCE

Campaign Coordinator, Ninth Congressional District of Virginia, Don Beyer for Governor. May 1997 - November 1997. Organized campaign efforts for democratic governor candidate Don Beyer. Duties included working with 22 jurisdictional coordinators, 270 precinct coordinators, and thousands of campaign volunteers. Represented candidate at political events and campaign functions. Scheduled and organized candidate visits throughout the Congressional District.

Manager, Education and Training, Economic Development Assistance Center, Virginia Polytechnic Institute and State University, Blacksburg, Virginia. September 1996 - April 1997. Mission of the center is to provide technical and research support for local governments, economic development groups, and community organizations in the Commonwealth. Duties include developing and scheduling programs, implementing a logistics plan for each program, scheduling presenters, and preparing promotional materials for programs. Other responsibilities include re-defining the mission and purpose of the Education and Training team, developing a marketing and promotion plan for the center, working with local constituents and governmental agencies, and identifying potential external funding sources.

Senior Research Assistant, Virginia Polytechnic Institute and State University, Blacksburg, Virginia. January 1994 - June 1996. Project sponsored by the Virginia Department of Education. Purpose was to analyze the current status of secondary trade and industrial education in Virginia and make recommendations for possible improvements. Duties included managing project budget, developing annotated bibliography of secondary reform efforts, and working with local schools to develop a new delivery model for secondary trade and industrial education in Virginia. Other responsibilities included researching, planning, and presenting information concerning trade and industrial education at high schools across the Commonwealth.

Governmental Affairs Intern, American Vocational Association, Alexandria, Virginia. Summer 1994. Purpose of internship was to study federal legislation's role in funding vocational and technical education. Primary responsibility was analyzing 1994 National Assessment of Vocational Education (NAVE) Interim Report to Congress. In addition, conducted telephone survey of selected state departments of education. These surveys focused on articulation between secondary vocational education and four-year universities.

Manager, Maid-Rite Sandwich Shop, Christopher, Illinois. May 1991 - July 1993. Hired and supervised fifteen staff members. Introduced staff training programs to improve customer service and employee productivity. Directed all areas of operation including budgeting, personnel, purchasing, and cost control.

President, Christopher Area Chamber of Commerce, Christopher, Illinois. May 1991 - May 1993. Appointed president of faltering organization. Supervised reorganization, recruited new members, and appointed advisory committee to help identify needs and goals of the organization.

Real Estate Salesperson, Rex Rowland Realtors, Christopher, Illinois. June 1990 - July 1993. Closed twenty-seven transactions from June through December during 1991. Received bronze, silver, and gold awards presented by the Illinois Association of Realtors on basis of number of dollars and number of sales achieved throughout the state.

Congressional Intern, Assigned to Washington, DC, Office of Congressman Glenn Poshard of Illinois. Summer 1989. Responded to constituents' concerns and served as liaison between constituents and appropriate agencies. Recorded minutes of committee meetings, researched selected subjects, and attended floor meetings.

UNIVERSITY COMMITTEES AND ORGANIZATIONS

President, Graduate Student Assembly, Virginia Polytechnic Institute and State University, Blacksburg, Virginia. 1995 - 96. Elected to represent approximately 6,000 on- and off- campus graduate students. Developed and implemented plan of work for organization with a total budget of over \$80,000. Supervised thirteen committees within the Assembly and organized graduate student representatives for fourteen university committees and commissions.

Commission on Student Affairs, Virginia Polytechnic Institute and State University. 1995 - 96. First student elected as chair of a university governance system commission or committee. Commission charged with studying, formulating, and recommending university policies and procedures affecting graduate and undergraduate student life and morale.

Graduate School Process Improvement Team, Virginia Polytechnic Institute and State University. 1994 - 96. Team evolved from Westinghouse Process Improvement Workshop. Team reviewed and examined processes and procedures related to the marketing, recruiting, admitting, and graduating of students.

University Committee on Athletics, Virginia Polytechnic Institute and State University. 1993 - 97. Committee charged with advising athletic director on matters such as academic progress, admissions, financial aid, and residential life of student athletes.