LEADERSHIP IN CAREER AND TECHNICAL EDUCATION:

BEGINNING THE 21ST CENTURY

EDITED BY:

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UCWHRE

UNIVERSITY COUNCIL FOR WORKFORCE AND HUMAN RESOURCE DEVELOPMENT

2005

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*University Council for Workforce
and Human Resource Education*

2005

Columbus, Ohio USA

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The University Council for Workforce
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The University Council for Workforce and Human Resource Education is a nonprofit organization representing the nation's leading universities. The Council provides leadership for teaching, research, and service initiatives in career and technical education and human resource development.

The mission of UCWHRE is to be a recognized force in shaping the future of career and technical education and human resource development through improving the policy and practices of education in the United States toward the betterment of individuals and the larger society.

The purposes are to:

1. Provide a forum surfacing and debating the contemporary issues significant to career and technical education and human resource development.

2. Develop and formulate positions on emerging trends and issues affecting career and technical education and human resource development.

3. Improve the capacity of member institutions to shape the direction of career and technical education and human resource development through teaching, research, and service.

4. Promote an understanding of significant issues in career and technical education and human resource development.

5. Increase the visibility of higher education institutions concerned with the professional preparation of individuals preparing for roles in

career and technical education and human resource development.

6.   Expand collaboration with individuals and organizations, which focus on issues affecting career and technical education and human resource development.

In carrying out the above purposes of the organization, attention will be given to maintenance, development, and operation of the UCWHRE.

Foreword

Leadership in Career and Technical Education: Beginning the 21st Century is the third edited book published by the University Council of Workforce and Human Resource Education (UCWHRE), formerly the University Council of Vocational Education (UCVE). The previous books, *Beyond Tradition: Preparing the Teachers of Tomorrow's Workforce* (Hartley & Wentling, 1996) and *Beyond Tradition: Preparing Human Resource Development Educators for Tomorrow's Workforce* (Stewart & Hall, 1998) reported trends in their respective fields and also addressed issues that are perennial to workforce education. This publication is somewhat different in that it represents a collaborative effort among members of the UCWHRE, the National Research Center for Career and Technical Education and the National Dissemination Center for Career and Technical Education. This collaboration symbolizes efforts to link theory and research to practice and practice to theory and research.

It is for the above reasons, as well as some additional ones that I will reference, that I celebrate having played a role in this edited publication. Contributing authors include some of the most established scholars in the field and some of the most promising. Chapter reviewers helped the authors polish their scholarship and make the texts more accessible to practitioners where much of the "real" work and leadership of career and technical education occur. Not only do I value and appreciate these efforts from my colleagues but I also find inspiration and hope from them in these challenging times. While these individuals made significant effort and played a central role in this publication, Dr. Jeff Allen at the University of North Texas in particular assumed a major leadership role in this publication and without his contributions it is doubtful this publication would have come to fruition.

Providing a coherent sense of leadership in career and technical education at the beginning of the 21st century is not an easy task for many reasons:

First, career and technical education exists at many levels (e.g., middle school, high school, community and technical colleges) and has many purposes (e.g., preparation for work, academic achievement through contextualized learning, career development). Consequently, leadership in career and technical education is difficult to operationalize and theorize since it exists for many reasons and in many different contexts.

Second, in this era of *No Child Left Behind* (NCLB), some would suggest that career and technical education should no longer be offered in public schools but rather only at the postsecondary level. As a result, career and technical education programs continue to decline across the nation as schools and states struggle with diminishing resources and increased expectations however narrowly defined (e.g., student achievement on standardized examinations).

Third, programs which prepare career and technical education professionals have greatly declined in the past two decades at research extensive and land grant universities and, consequently, so has research that focuses on career and technical education in general and on leadership in particular. Further, those academicians in higher education who still are members of programs that prepare career and technical education professionals and leaders, often times have had role expansion or revision to the extent that their focus is less on career and technical education and more on such areas as Human Resource Development.

The contributors to this edited book authored their respective works in the context of challenges in the nation, higher education, and career and technical education. While the chapters differ theoretically, empirically, and practically, they uniformly address leadership issues for, in, and about career and technical education. It is my hope that you find the chapters as meaningful as I have.

Jim Gregson
President
University Council of Workforce
and Human Resource Education

CHAPTER ONE

New Approaches to Preparing
Career and Technical Education Teachers

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The Pennsylvania State University

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> The future is here. It's just not widely
> distributed yet. William Gibson (1948 -)

The purpose of this chapter is to provide a bit of speculation regarding forms that career and technical education (CTE) licensure/preparation will take in the 21ˢᵗ century. To a certain extent, the future is already clear. CTE education itself changed quite dramatically in the last 15 to 20 years of the 20ᵗʰ century. By the turn of this century the effects of these and other legislative/demographic/market developments on CTE teacher preparation programs were evident. Thus to a great extent this chapter is more about observing recent developments in CTE teacher preparation than pure speculation about the future.

Before beginning I would like to recognize the work of those who have gone before me in writing about CTE teachers and teacher preparation. Many of these scholars are cited in what follows. I would, however, draw the reader's attention to an earlier University Council-edited book *Beyond Tradition: Preparing the Teachers of Tomorrow's Workforce,* edited by Hartley and Wentling (1996), which deals exclusively with CTE teacher preparation; to the work of Richard Lynch (1996, 1997), who has written extensively on this topic; to the recent work by Bruening, Scanlon, Hoover, and Hodes (2002); and finally to the comprehensive work of McCaslin and Parks (2002).

Teacher preparation is a critical and timely issue for CTE (Maurer, 2001; Smith, 2003). Maintaining an adequate supply of teachers is particularly critical for CTE. All too often, when a school district cannot find a CTE teacher the solution is to eliminate the program. Thus it is not too dramatic to suggest that a viable CTE teacher preparation system is second only to CTE program enrollments in its potential impact on the future of CTE. In fact it is exactly the inability of the traditional university fulltime student model CTE teacher preparation to solve CTE teacher shortages and the resultant increase of CTE teachers who enter the profession using alternative certification routes that is already changing preparation. However, before elaborating on these and related issues, it is useful to review the present state of CTE and ask *What is the future of CTE?* because ultimately as its prospects rise or fall so too does CTE teacher preparation.

Career and Technical Education
in the 21st Century

CTE is practiced at the high school and pre-baccalaureate postsecondary level. Each has undergone changes at the end of the 20th century that have implications for CTE teachers and teacher preparation programs.

Community and Technical Colleges

The first factor of significance affecting postsecondary pre-baccalaureate technical education in the 21st century is the increased importance of workers prepared at the technician level. For example the second fastest growing occupation is, according to Department of Labor projections, computer support technicians. There will be 100,000 more of these jobs than jobs for computer engineers. While immigration via temporary H1b visas prevented significant shortages of technicians in the 1990s the advent of stricter immigration regulations since 9/11 terrorist attacks suggests that firms will have to rely on the domestic labor market to provide most of such workers in the future. This reality, coupled with the

growing number of underemployed 4-year college graduates that are returning or reverse-transferring into 1-year and 2-year technical programs suggests the future outlook for the expansion of postsecondary CTE should be good, and thus the demand for teachers at this level should also increase.

A second factor affecting postsecondary technical education is the increased credentialing requirements for both new and incumbent CTE faculty. During the 1990s many community and technical colleges, as well as for-profit technical schools, sought accreditation that would allow them to offer more advanced degrees. In order to meet standards of regional accreditation groups these institutions are under pressure to increase the educational credentials of their technical education faculty. Thus both new and old faculty find themselves needing higher-level degrees. While an associate degree may be adequate for initial employment in content areas of teacher shortages, the new standard is a bachelor's degree with the prospect of masters and even doctoral degree requirements in the future. Thus a significant new market for CTE teacher preparation programs, particularly at the graduate level, is now postsecondary technical education faculty seeking advanced degrees.

Private Sector For-profits

While largely overlooked – if not looked down upon – by the teacher preparation community, the number and relative importance of for-profit CTE schools is significant. There are 490 private for-profit CTE schools in the U.S. Importantly; these schools are centralized in California, Pennsylvania, Florida, and New York. While in the past the credentials of faculty in these institutions were based mostly on work experience, these institutions are now also seeking accreditation to offer degrees and thus also must upgrade their faculty, thus creating another new potential demand for undergraduate and graduate education.

High School CTE

The future of CTE teachers and teacher preparation programs, regardless of the form they may take in the future, depends first and foremost on the health of high school CTE. By the turn of the 21st century high school CTE had already undergone significant transformation. Enrollments that declined during the 1980s had stabilized, and the inclusion of Tech Prep in federal legislation legitimized an expanded mission that included preparation for college. Thus, it is argued, the present state of high school CTE is likely to predict its future for some time to come.

At the turn of the century CTE was still a major factor in the American high school curriculum. Forty-three percent of high school teens take three or more CTE courses (National Assessment of Vocational Education [NAVE], 2002); the only content areas where more credits are generated is English: 4.3 versus 4. One in four high school teachers teach CTE courses. More importantly one quarter of high school students are CTE concentrators taking three or more courses in a single labor market area. Of this group 80% take an academic course sequence as well, and when they graduate, this group of CTE concentrators 60% go on to college, with 60% going to 1-year and 2-year technical programs (Gray, 2002).

Perhaps more important to the future of high school CTE is the fact that 25% of teens drop out and of those that graduate 30% go to work, not college. Research indicates that CTE is the best curriculum to keep these teens in high school, and outcomes studies find they are more likely to be employed or in college when they graduate than similar cohorts that do not participate (Harvey, 2002, Plank, 2001). Importantly, while work-bound and at-risk youth may not be the priorities at the federal level they continue to be of concern at the local level and are therefore an important reason why CTE support at the local and state level has and will remain strong. Thus, it is predicted that high school CTE

will continue to be viable and that the demand for CTE teachers will be stable.

CTE Teachers in the 21st Century

Demand for CTE Teachers

It is predicted that the numbers of CTE teachers at the postsecondary level will increase and at the secondary level will hold constant in the foreseeable future. While specifics regarding the demand for community/technical faculty are not available, data for community college faculty as a whole suggest there will be nationally a need for as many as 30,000 new appointments due to retirements alone (Berry, Hammons & Denny, 2001).

At the high school level demand is predicted to be stable in terms of positions but grow due to retirements. Camp (2000) reported, for example, that the demand for agriculture teachers had remained stable or grown slightly between 1996 and 1998. The number of secondary school teachers in general is predicted to grow by 1.2 million by 2008 (Gerald & Haussar, 1998). Given that around 25% of all high school teachers teach CTE-related courses, it is estimated that the number of new/additional CTE teachers will grow by approximately 250,000 during this period. Demand will continue to be disproportionately high in urban districts, and in states with comparatively low salaries, and for teachers who are minorities (Dykman, 1993).

At the top of the list of factors contributing to increased demand for teachers is teacher turnover. Given the aging of the teaching force – the average age of teachers has increased steadily over the past 10 years (Hussar, 1999) – some see future demand as being driven by a wave of retirees.

Shortages of CTE Teachers

While prediction of dire K-12 teacher shortages in all subject areas evaporated as the economy worsened and the unemployed filled vacancies, shortages of CTE teachers remained significant. Based on the U.S Education Department School Staffing Survey (2003) the difficulty in finding high school CTE teachers is equal to that of finding special education teachers and second only to foreign language teachers. Clearly, a related problem is how few who complete formal CTE teacher preparation programs opt to become teachers. Brown (2002) found, for example, that about half of those with bachelor's degrees in agriculture education become teachers.

The lack of postsecondary CTE teachers is no less dramatic. In a 1999-2000 survey 34% of respondents reported an increased need for technical teachers and that 23% of their searches for postsecondary industrial technology teachers had failed to find a qualified candidate (Custer & Daugherty, 2000). Sixty-four percent indicated they had increased faculty by one or more. Of particular importance to CTE teacher preparation institutions, this study found that criteria for selecting faculty had changed dramatically. While in the 1980s technical skill was considered to be the most important qualification, by 2001 a doctoral degree and teaching experience were considered more important. Complicating the issues again is that the survey found that only 27% of those who did earn doctorates went into college teaching (Brown, 2002). Thus is it reasonable to assume (a) that the need for postsecondary technical teachers will increase, (b) that most candidates will not have doctoral degrees, and therefore (c) that there will be an increase in the number of new hires who will need to complete this degree.

Licensure

In all states, teaching CTE programs in public secondary-level schools requires licensure, and in a few states

licensure is also required to teach postsecondary CTE education in community and technical colleges. These regulations provide the template from which teacher preparation programs are constructed. The importance of understanding the role of state-level teacher licensure requirements in teacher preparation programs cannot be overstated. If there is one criticism to be made of much that has come before regarding the reforming of CTE teacher licensure, it is that the discussions and recommendations seem to assume that teacher preparation programs drive licensure. In reality, it is exactly the reverse. State licensure requirements drive teacher preparation (Gray & Walter, 2001). Thus to a great extent predicting CTE teacher preparation programs in the 21st century would be easy if the direction of CTE teacher preparation could be predicted. The present system in most states provides a number of different CTE certifications by program areas. With the exception of T&I certification/licensure, requirements follow a baccalaureate preparation model that is customary for other high school certifications. In a majority of states beginning T&I teachers do not need a degree: work experience is the entry-level requirement. This system has prevailed pretty much unchanged for 100 years, the only major change being the addition of standardized testing requirements. Where it is to change one would expect that (a) the multitude of CTE certifications would be consolidated and (b) at least an associate degree would be required for T&I teachers. Gray and Walter (2001) proposed, for example, that all CTE teacher certifications be collapsed into just two: one for programs whose mission is not transition to employment and the other for programs whose mission includes preparation for work. To date there is little to suggest that this proposal or any other will lead to the reform of CTE teacher preparation.

Present State of CTE Teacher
Preparation Programs

The decline in the numbers and size of CTE teacher preparation programs has been well documented (Bruening et al., 2001; Dykman, 1993; Hartley & Wentling, 1996; Lynch, 1996). Through the 1970s, the majority of CTE teacher preparation programs were discipline specific. For example, separate programs and faculty could exist for agriculture, business, family and consumer sciences, as well as trade and industrial education, all within the same academic department. Often these departments were quite large in terms of both faculty and enrollment. Concurrent with the decline in CTE high school enrollments in the late 1980s, enrollment in CTE teacher preparation programs also declined, as did the number of CTE teacher preparation programs. It is estimated that of the 432 institutions that offered CTE teacher licensure programs in the 1980s, there were at least one-third fewer by 1990 (Dykman, 1993). Since 1990 the field declined another 11% (Bruening et al., 2001).

One development is especially important – consolidation. While many higher education programs were simply eliminated, those that survived were typically downsized (Hartley, Bromley, & Cobb, 1996) combining separate CTE teacher preparation programs into a single common program of study and/or eliminating those CTE program areas with low enrollments. Research University-based programs in particular are now fewer and much smaller. In many cases CTE graduate education programs turned to the preparation of human resource/workplace learning and performance professionals, and CTE teacher preparation became a less important function. In other cases CTE teacher preparation programs were incorporated – some say submersed – into larger departments such as curriculum and instruction or education leadership.

What can be said in summary about the state of CTE preparation programs at the turn of this century? To begin

with there are fewer of them. While Research University-based CTE teacher preparation programs dominated the field in the 20th century, these programs were much diminished by 2000, and preparation of trainers not teachers had become the bread and butter activity. While documentation is limited, it would seem that the locus of control in CTE teacher preparation has in most cases moved to smaller, non-research-based colleges and universities.

Alternative Certification and Competitors: The New Reality

Preparation of teachers, including CTE teachers, for most of the 20th century was the exclusive purview of public and private colleges. Teacher shortages at the turn of the 21st century, particularly in urban districts, ended this exclusively, probably forever.

Alternative Route to Certification

The term *alternate certification* (AC) is used widely to refer to methods of licensing teachers who do not complete a formal baccalaureate teacher education program as fulltime students. Presently, 45 states and the District of Columbia have legislation authorizing various alternative route models. It is estimated that there are as many as 150,000 practicing teachers gaining certification via alternative routes (Chambers, Weeks, & Chaloupla, 2003).

Feistritzer (2002) found that alternative certification models exist to service up to 10 different types of potential new teachers. Typical examples are those designed to induct into teaching those who hold a BA but not in education, hold a BA in education but are not certified to teach, hold a non-education BA are but willing to return for a masters degree in education, or are presently teachers but want to switch fields; most common is some provision to allow such individuals to begin teaching immediately. Another more recent AC has been adopted by some states in order to comply with federal

requirements that all teachers be certified in the fields they teach whereby practicing teachers are awarded additional add-on certifications if they can pass a standardized test such as PRAXIS in another content area.

Faced with unprecedented teacher shortages, and the rather low percentage of graduates from traditional baccalaureate teacher preparation programs actually going into teaching, 40 states had enacted alternative teacher certification regulation by the year 2000 (National Center for Educational Information [NCEI], 2000). New Jersey, for example, was reported to hire 22% of its teachers via the alternative certification routes. Such legislation is an important factor in allowing states to recruit teachers from abroad using H1b visas; there are estimated now to be over 10,000 non-native-born teachers in the U.S via the H1b visa program who become certified via alternative certification regulations. And much to the disappointment of formal teacher education programs, research that has been conducted finds that AC teachers are as effective as those who come via the alternative route.

Preliminary research suggests that individuals who enter the profession via AC routes are at least as effective as those who complete a rational teacher preparation program (Feistritzer, 2002; Klagholz, 2000; Kwiatkowski, 2000). Evidence suggests that AC teachers are older and perhaps for this reason are more committed and have remained in the profession longer than graduates of traditional programs and that they perform as well or better on the National Teachers Exam.

New Competitors: Community/Technical College and School Districts

Closely connected, if not the result of the rise of alternative certification, is the entry of community/technical colleges, for-profits, and even school districts into the market of providing the course work for these arrangements.

Community colleges have for some time provided programs to certified early childhood professionals and teacher aids but not traditional classroom teachers. Faced with unprecedented needs and the inability of higher education institutions to develop solutions, states are now turning to their community college systems, which in general welcome the challenge. Texas, for example, now allows community colleges to provide teacher preparation programs. In a recent survey of community colleges deans, 54% indicated they had one or more teacher preparation programs (Gerdeman, 2001). As will be discussed, many of these programs are offered cooperatively with 4-year and graduate degree-granting programs. And finally many large school districts have begun their own programs; New York City, which in one year was forced to hire 9,000 unlicensed teachers (Bradley, 1999) is a prime example.

New Competitors: Private Sector For-Profits

Another new entrant into the teacher education market is for-profits, many of which are already licensed to offer baccalaureate degree programs. Sylvan Learning Systems, for example, earned $59 million from teacher education offerings in 2002 (Blumenstyk, 2003). Prime targets of these companies are individuals with degrees who wanted to enter teaching, those needing professional development credits, and those seeking master's degrees. The potential of for-profits dramatically changing the landscape of teacher preparation and graduate education is nothing less than startling (see Blumenstyk, 2003). The effect of CTE teacher preparation is less than clear. Because the CTE teacher education market is relatively small, it may not be worth for-profits' consideration. However, CTE teachers who need advanced degrees often find that their employers are not too choosey about what field these degrees are in. Thus the potential for CTE graduate education to lose market share to for-profits is very real.

New Roles and Models of
CTE Teacher Preparation

By the turn of the 21ˢᵗ century the number of CTE programs had declined. CTE teacher preparation programs at research-based universities, in particular, had either been eliminated or significantly reduced in size and scope. By the turn of the century the smaller teaching-based colleges and universities were now the major providers of CTE teacher preparation. The question remains: What will likely be the prevalent models of CTE preparation in the future? According to Bruening et al. (2001) the traditional model continued to be the most prevalent at the turn of the 21ˢᵗ century. In this model the typical student was a fulltime undergraduate who took a program of study that included both pedagogy and skills courses. It is unlikely this model will be dominant in the future because it is both expensive to run and inefficient to meet the demand for new CTE teachers. To begin with, fewer and fewer institutions will be willing or able to afford the high cost of providing occupational skills training and will be forced to resort instead to verifying directly or indirectly a candidate's competency. Second, considering the huge numbers of current teachers approaching retirement age and that only 50% of those who finish a formal teacher education program go into teaching and, of those, 50% leave the field in 5 years and 80% in 10 years (Szuminski, 2003), it is clear the traditional model simply will not turn out enough teachers to meet the demand and thus they will be forced to resort to other models that will. These new models will vary but have in common the need to address new roles.

New Roles for CTE Teacher
Preparation Programs

It is speculated that CTE teacher preparation programs are beginning to evolve in reaction to the changing roles they will adopt in order to survive.

Documentation of Occupational Skills Content

For much of the last half of the 20th century CTE professionals debated the wisdom of the T&I teacher preparation/licensure model that recognized work experience not a baccalaureate degree as the core criterion. Often lost in this debate was the reality that work experience was the method by which T&I teachers learned subject matter knowledge or the skills of the occupation they would teach. The model was at least partly based on a very pragmatic realization that teacher preparation programs could not begin to provide instruction in the wide range of occupations included in T&I. To begin with it would be very expensive and second it would be very difficult to find individuals who were both craft persons and possessed degrees necessary to teach in higher education. Today all CTE teacher preparation programs are faced with the same reality. Providing the skills instruction is too expensive, and finding individuals with both degrees and skills is increasingly impossible (Brown, 2002). Thus it is predicted that in the future all but the best funded institutions or those that have non-CTE teacher preparation programs that share similar instruction training facilities such as colleges of agriculture will be forced to rely on some type of prior or concurrent experience where teachers gain content knowledge. Thus it is likely that most CTE teacher preparation programs will need to rely on prior work experience, skill specific associate degrees, or required internships to insure that CTE teachers have content knowledge. It is also likely that CTE teacher preparation programs will be accountable for determining the adequacy of this knowledge through some type of occupational skills assessment procedure.

Classroom Supervision of Instruction

The major role of CTE teacher preparation programs will continue to be teaching candidates pedagogical skills. However, whereas it is predicted that a major proportion of new CTE teachers will start with some type of

provision/alternative certification, CTE teacher preparation programs will find it necessary to provide short-term initial "train-the-trainer" type crash course in how to teach and then provide on-site supervision of new CTE teachers.

Awarding of Academic Credit

Awarding academic credit toward licensure and or higher education degrees for work conducted in other institutions or state-endorsed alternative route programs will be a major role of CTE programs in the future. While, as will be discussed subsequently, many different groups may sponsor alternative teacher preparation programs, including school districts, these sponsors are not accredited nor are they likely to become accredited to award degrees. Furthermore in most states only specific institutions are designated by the states to award teaching certificates, and while this could change, higher education lobbying is unlikely to allow this to happen. Thus, faced with the realities that most CTE teacher preparation programs will need to rely on prospective students who have already mastered the skills and that one likely place to do so is by gaining an associate degree in a technology at a community/technical college and that, in light of teacher shortages, community/technical/junior colleges are increasing seen as providers of potential teachers, it is likely that many CTE teacher preparation programs will develop articulation agreements with community colleges whereby they will accept community college credits towards a degree and teacher certification. It is equally likely that most CTE teacher preparation programs will seek ways, if they have not done so already, to award credits for work experience, a practice that exists for returning adults at most colleges. The market for such developments is compelling. The 2-year providers have the occupational programs and students; the college-based CTE teacher preparation programs have the state/national accredited teacher preparation programs. The key to making the articulation work is the ability or willingness of the latter to accept the credits of the former toward a degree and/or teacher

certificate. Such arrangements are becoming quite common, in part because, when colleges are unwilling to accept the credits of 2-year providers, state legislators, as witnessed in Florida and Texas, seem more than willing to authorize the 2-year providers to offer a complete teacher preparation program.

Certifying Out-of-Field and Add-on Permits

In times past, when adequate supplies of teachers in most program areas was the rule, not the exception, it was somewhat uncommon for working teachers to seek certification so they could teach in a new content area. While again exact data are not available, it is predicted that this route will become more common. One reason is the track taken by many states in complying with the provision of *No Child Left Behind* requiring that all teachers be highly qualified. In many states this provision has been interpreted to mean that all teachers should be certified in the field they teach, and in order to comply quickly states have made it considerably easier to gain additional teacher certifications.   In some states, for example, out-of-field or add-on teaching endorsements are given to anyone who can pass the relevant subject matter PRAXIS exam. In the case of CTE, particularly T&I, there are no such exams; thus CTE teacher preparation programs will likely develop some type of program to accommodate those who wish to change to CTE fields. Such programs are, for example, an important means of providing technology education teachers in South Carolina (Simons & Linwell, 1998).

Professional Development

While not new, it is predicted that providing professional development activities for practicing CTE teachers will grow in importance. In 35 states, permanently certified teachers must complete prescribed professional development activities in order to maintain their license to teach (Hirsch, 2001).   In many states CTE teacher

preparation programs are a major provider of these activities. Because providing such activities is a source of additional funding and credit generation it is likely they will grow in importance in the future.

New Models of CTE Teacher Preparation
Alternative Certification

It can be predicted that AC in CTE will become the dominant teacher preparation model in the 21st century for several reasons. First, fewer and fewer traditional college students aspire to be CTE teachers; thus enrollments of fulltime students will likely decline. Also, fewer and fewer CTE teacher preparation programs can afford to maintain the instructional labs to teach occupational skills. As witnessed by the decline of CTE teacher preparation programs at most large universities, this combination of declining enrollments and high costs leads sooner or later to institutional decisions to eliminate the programs. Thus it seems difficult not to conclude that those CTE programs that adopt some form of the T&I model will likely survive. Second, even if institutions are willing to continue to support traditional programs, these programs have not been able to provide sufficient numbers of teachers to meet the demand. Thus under pressure from local school officials, states will adopt alternative certification regulations; most have already done so.

It is predicted that the future model of teacher preparation in the U.S. will be AC and that CTE will be no exception. A long article in *Techniques* on alternative routes to certification by Wright (2001) is one sure sign of the importance of AC to the CTE field. The specific form AC takes will probably differ state-by-state and institution-by-institution but will have some common challenges. Namely, AC programs in CTE will need to provide a delivery system that accommodates mostly part-time adult learners, develop a means for assessing not teaching subject matter skills and awarding academic credit for this experience, and a way to provide some type of a short-term train-the-trainer type

teaching methods course, which probably will take place in the summer, followed by supervision of instruction in the new teacher's classroom.

On-Site Teacher Preparation Models

One alternate route variation is the on-site teacher preparation model. In this model the school district/regional CTE center, etc. cooperates with the certification institution whereby the candidate learns the profession via a form of supervised on-the-job training. The key is the word *supervised*. In this model the teacher preparation institution provides on-site supervision of instruction and awards academic credit for successful completion. This is the model used, for example, for T&I certification in Pennsylvania whereby Indiana University of Pennsylvania, Penn State University, and Temple University supervise beginning T&I teachers during their first 2 years (Walter, 2002). In a certain sense this method is an alternative to the professional development school.

Distance Education

While research suggested that at the turn of the 21st century most CTE teacher preparation programs were still traditional, they did find that one area of change was the rather widespread adoption of some form of distance education. As the number of CTE teacher preparation programs declined, those remaining were positioned via attrition to provide teacher preparation outside of their traditional service areas; distance education was the typical solution. Whereas it is predicted that more than half of future CTE teachers will enter the profession via some alternative route, that they will begin teaching fulltime prior to gaining permanent certification and therefore will be working fulltime while trying to complete CTE teacher preparation course work, distance education is an obvious solution for both the student and the preparing institution.

Flexible Graduate Education

As discussed previously there is evidence that the demand for CTE graduate education will increase. Importantly this does not mean the demand for fulltime graduate education will grow. The opposite is predicted. In this regard the future is here. Few native-born students are interested in fulltime graduate education. Most CTE graduate education programs that have survived to the 21st century have already adapted to this reality by offering condensed courses, distance courses, etc.

Program Content

It has been argued above that, aside from graduate education, providing pedagogical instruction, not content knowledge, will be the major instructional role in the future for most CTE teacher preparation programs. Teacher effectiveness research suggests four areas of competence needed to be a successful teacher (Smith, 2003): academic/verbal skills, subject matter knowledge, teaching methods, and field experience. Of these, teaching competencies and field experiences are likely to dominate. While arguably the competencies for beginning teachers as outlined by the National Board for Professional Teaching Standards (NBPTS, 2001) are applicable to all teachers including CTE teachers, there are special competencies for CTE teachers. Gray and Walter (2001), for example, have suggested the following:

- Analyze the classroom/laboratory environment and develop a plan to maximize the effectiveness of the instructional program as well as safeguard the health and well-being of all;

- Design and deliver instruction within the competency-based methodology;

- Identify and involve relevant stakeholder groups;

- Develop and cultivate business, industry, and community partnerships;

- Implement Tech Prep fundamentals;

- Plan, initiate, and supervise work-based learning; and

- Assist in the post-graduation placement of students.

Additionally there would seem to be others, including the following:

- Ability to develop Web-based instruction.

- Ability to pass general knowledge teacher tests.

- Ability to develop instructional strategies for students of various abilities including at risk and special needs.

- Ability to develop rapport with race and ethnic diverse students.

- Ability to emphasize and reinforce occupationally specific math, science and communication concepts.

- Ability to deal with work-related stress.

Of these competencies, teaching prospective CTE teachers how to emphasize and reinforce specific math, science, and communication concepts is perhaps the newest, and at this time the most pressing concern. As explained earlier, high school CTE students are as a group less academically prepared when they enter high school and thus are also apt not to do as well on state-mandated achievement tests. Thus CTE programs find it necessary to do whatever possible to reinforce the academic content already imbedded in the occupational content. In general this is a totally new competency for CTE teachers, and both they and CTE teacher educators are now struggling to become skilled.

Conclusion

As a way of summarizing, what can be predicted for the future of CTE teacher preparation? The outlook for postsecondary CTE seems strong. At the high school level attrition due to increasing numbers of students going to college had played itself out by the turn of this century. While the number of CTE credits taken by high school students has declined, 43% still take three or more CTE courses, 25% are considered concentrators taking three or more in a single labor market area, and of this latter group 60% go to college. Further it is predicted that at the state and local level CTE will continue to receive significant support because serving the now consistent 30% of students that go to work not college and doing something to reduce the 25% dropout rate prevention will be a priority. All of which suggests that the demand for CTE teachers will remain constant at the high school level and grow at the postsecondary level, particularly for graduate education.

In predicting a future model of CTE teacher preparation one major caveat needs mentioning first. Specifically, that first and foremost CTE teacher preparation programs are driven by state licensure/teacher certification requirements. For example, if states were to move away from unique teaching certificates for different high school CTE programs to a more generic credential, many teacher preparation programs would change dramatically. At this time one direction in state licensure is clear. Namely that states have largely abandoned the idea that teacher preparation programs in higher education institutions are the only or even the preferred provider of teachers. The implication of this development seems clear; the days of a few institutions having little or no competition in preparing CTE teachers are over (or soon to be over) particularly if these institutions are perceived as being inadequate to meet state needs for CTE teachers.

It is highly unlikely that the present traditional model of fulltime undergraduate preparation that includes skill training will survive as the dominant model. It is or will be too expensive to operate and, because of declining interest in CTE teaching among traditional college students and the low number of CTE students who actually become teachers, this model cannot provide adequate numbers of teachers. The declining number of research universities that have viable CTE teacher preparation programs already evidences the result of this reality.

There are developing new markets for CTE preparation programs. First, as the community/technical colleges and for-profits technical schools seek to upgrade the credentials of their technical education faculty in order to meet requirements of accreditation agencies, these professionals will be looking for advanced degrees, and the logical major is CTE. Second is the largely untapped group of workforce development professionals who work for non-profits and government-sponsored programs. In the past these individuals came largely from the ranks of unemployed themselves, but there are now signs that this field is becoming professionalized, and thus creating a new market.

It is predicted that in the future the most common route to CTE teaching will be some form of AC. This means that students will be older, most likely have at least an associate degree, have prior work experience, and will not be fulltime students. As a result it is most likely that CTE teacher education programs will rely on work experience, degrees, or internships to ensure subject matter competence. The role of the CTE teacher education institution will be to certify subject matter competence and provide instruction in teaching effectiveness methods. Major challenges will include preparing new teachers in how to accommodate special needs, at-risk youth, and reinforcing math, science, and communication concepts in the curriculum. Another challenge will be providing this instruction in formats other than traditional college classes; many CTE teacher education

programs have already started using distance education, off-campus courses, and the use of adjunct faculty. And lastly it is again quite possible if not probably certain that the alternative route certification models states adopt will include some type of on-site supervision/observation of new teachers and that CTE teacher preparation programs will be expected to provide it.

Finally, while in the past CTE teacher preparation was the sole domain of traditional degree-granting institutions, it is likely in the future these programs will no longer have such a monopoly. The priority at the state level will be to ensure there are teachers, and there are signs already that the states no longer view teacher preparation as something that only higher education institutions can do. It is highly likely, for example, that in many states community/technical colleges will offer teacher preparation programs and even be licensed by the state to award licensure and degrees. If this is the case it is also highly likely that for-profits will enter the market as well. Many large urban districts have already started their own teacher preparation programs, and they will include preparing CTE teachers if necessary. Thus perhaps the greatest challenge for present CTE teacher preparation programs is to become strong partners in alternative route teacher preparation programs as they develop in each state. In the future teacher education in general will become an open market. This is perhaps the greatest threat to existing programs in many states. Survival will depend on taking the initiative to become a part of this new reality of higher education capitalism unrestrained, and in a market only the most innovative, the most flexible, and the most efficient will survive.

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CHAPTER TWO

Evolution of a Theoretical Framework for Secondary Level Vocational Education and Career and Technical Education over the Past Century

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The authors argue that a theoretical framework is at least as important for a profession as for a research study. They examine the theoretical framework that under girded the system of vocational education established under the Smith-Hughes legislation in the early 1900s. They briefly outline the attempts of late 20th century scholars to develop a theory base for vocational education as the movement toward career and technical education took hold. They contend that the career and technical education system evolving today is based on the principles of human capital theory, taking into account the demands of educational reform, ongoing calls for educational accountability at all levels, and the demands imposed on workers by a high-performance economy and society. Finally, they argue that the curriculum and pedagogy of career and technical education can no longer be based on behaviorist principles and that the nature of our instructional programs must change to meet the demands of the changing workforce for critically-thinking, problem-solving workers.

The research literature is replete with references to theory and theoretical frameworks. Peer review requirements for manuscripts under consideration for scholarly publication typically include specific evaluation categories regarding theoretical frameworks. We find it difficult to imagine allowing a doctoral dissertation to be approved without at least some attempt to relate the research to some form of theoretical framework. The professional literature makes

much less ado about the relationship between theory and practice. An attempt to find meaningful references to an overarching theoretical framework for the profession of career and technical education has proven to be very difficult; yet, we would propose that a theoretical framework is at least as important for a profession as it is for a research study.

Theory

Kerlinger (1979) concluded that "*the purpose of science is theory*" (p. 15). His implication was that the fundamental purpose of science, and by extension, the fundamental purpose of research, is to create theoretical explanations of reality. Theory, he reasoned, allows us to understand and predict nature. Conversely, Marriam (1998) described theory as providing the conceptual basis for all research. In his retiring presidential address to the American Vocational Education Research Association in December 2000, Camp concluded,

> We can infer a symbiotic relationship between theory and research. Theory provides context without which the research could not be meaningful and research generates and tests theory without which the theory would not have meaning. The two, theory and research, are each the *sine qua non* of the other. (as cited in Camp, 2001, p. 12)

Creswell (1994) explained that theories can be grouped into three general levels based on each theory's degree of generality or specificity. *Grand theories* explain broad categories of phenomena and tend to be sweeping in nature. *Middle-range* theories explain categories of phenomena beyond the working hypotheses of everyday life but lack the overarching nature of grand theories. *Substantive theories* offer limited explanations and may be thought of as day-to-day propositions or hypotheses.

Theoretical Frameworks

Lamenting what they saw as a general lack of direction in the field, Doty and Weissman (1984) concluded:

> The confusion over what vocational education "should be" exemplifies the lack of a theory or theories of vocational education. Although some may consider the C.A. Prosser and T.H. Quigley (1949) theorems, or other similar principles, as the theories of vocational education they are not adequate. These are simply guidelines for conducting a vocational program – not explanations of behavior or physical events. (p 5)

We would argue that no profession has its own theory. Rather, we would contend that a profession should be based on theory and that the practice of a profession should be explained by its theoretical framework.

The use of the term *theoretical framework* in relationship to research is widely accepted. From a qualitative perspective, Marshall and Rossman (1989) used the term "theoretical frame" (p. 24). They contended that the theoretical frame provides a conceptual grounding for a study and rests on both tacit (experience-based) theory and formal (literature-based) theory. From that perspective, the "theoretical frame serves to inform the researcher's assumptions and guide his or her questions about the research setting" (Camp, 2001, p. 17).

In a symposium sponsored by the American Vocational Education Research Association (AVERA), Warmbrod (1986) wrote that "a theoretical/conceptual framework can be defined as a systematic ordering of ideas about the phenomena being investigated or as a systematic account of the relations among a set of variables" (p. 2). Warmbrod went on to admonish researchers in career and technical education to emphasize the theoretical/conceptual framework to

provide "structure and meaning to the interpretation of findings" (p. 4).

Noting the clear differences in perspective based on epistemological stances of qualitative and quantitative researchers, Camp (2001) proposed a definition of theoretical framework as, "*as a set of theoretical assumptions that explain the relationships among a set of phenomena*" (p. 18). Camp went on later to propose,

> to provide an adequate theoretical framework
> for a study, the literature must first establish at
> least one supportable premise and then generate
> one or more propositions that the researcher can
> postulate in the form of theoretical assumptions
> regarding the phenomena under study. (p 23).

Thus, a solid theoretical framework for research is a concise train of logical statements that begins with a theoretical premise as its basis and then proceeds through a rational series of supporting theories, research, or premises that lead inexorably to the study.

That same definition would seem to hold from the standpoint of developing a theoretical framework for a profession. If that assumption holds true, a theoretical framework for a profession can be defined as a "*concise train of logical statements that begins with a theoretical premise as its basis and then proceeds through a rational series of supporting theories, research, or premises that lead inexorably to the guiding principles of the profession.*" An acceptable theoretical framework for a research study can be based on a theory that is at *Grand, Middle-Range*, or *Substantive* level, but we do not believe that criterion is acceptable for a profession. Certainly for a mature profession such as career and technical education, which traces its foundations back to the ancient world, nothing less than grand theory should be acceptable as its basic theoretical premise.

For the remainder of this chapter, we propose to briefly outline the theoretical framework that served as the historical foundation for vocational education as it developed under the leadership of David Snedden and Charles Prosser during the years leading up to and following the passage of the Smith Hughes Act in 1917. That discussion will be followed by a very brief review of the theoretical foundations of vocational education for the latter third of the 20th century. Finally, we will propose a theoretical framework for contemporary career and technical education as we move further into the 21st century. We will not attempt to undertake here the task of developing a set of guiding principles, as Charles Prosser (1925) and Mel Miller (1985) did in the previous century.

A Theoretical Framework for Secondary-Level Smith-Hughes Vocational Education

David Snedden and Charles Prosser are generally credited with being the architects of Smith-Hughes style vocational education in the United States (Camp & Hillison, 1984). The most specific set of principles for the design of the vocational education system was provided by Prosser himself, in the form of what came to be known as Prosser's Sixteen Theorems (Prosser & Allen, 1925; Prosser & Quigley, 1949).

Although Prosser's theorems cannot be called "theory" in the literal sense, they comprise the guiding principles from which vocational education was designed in the early 1900s. We have never been able to find a cogent set of foundational theories or philosophies that were actually identified by any of the major players in the early development of vocational education in this country. Nevertheless, subsequent work by a number of authors, most notably Arthur Wirth (1972), helped vocational educators to informally reconstruct the theoretical foundation on which Prosser must have based his theorems. If we couple those theoretical bases with Prosser's theorems, a remarkably cogent theoretical framework emerges.

Social Efficiency

The overarching grand theory of social efficiency appears to have provided the basis for the rationale used by proponents of vocational education in the early 1900s (Camp, 1983; Doty & Weissman, 1984; Wirth, 1972). The basic tenet of social efficiency was that everyone benefits when a social and economic system works with maximum efficiency; therefore, social efficiency must be the ultimate goal of any social and economic system. A number of less sweeping, generally middle-range theories had implications on the overall social efficiency theory. The following paragraphs summarize the dominant theories that seem to have played a part in the early development of vocational education.

Social Class and Social Stratification

Many sociologists held that society was rightly divided into a class structure, based largely on economic considerations. Although the desirability of social stratification from an idealistic perspective was not defended, its contribution to social efficiency made stratification by social class an economically beneficial phenomenon (Camp, 1983; Wirth, 1972).

Social Control

The theory of social control also appears to have had a clear impact on Prosser's thinking. Social control theorists believed that a fundamental necessity for any society to achieve stability and to make progress was directly dependent on the ability of that society to maintain control over its members. Ideally, that control should be based on voluntary conformity to an accepted set of social norms and mores. In that theory, the role of schools was held to be the development of "good citizenship" and the inculcation of a set of accepted values based on the individual's place in society (Camp, 1983; Wirth, 1972).

Probable Destiny

Another widely held theory of the time was known as probable destiny. Given the goal of social efficiency and the reality of social stratification, a person's social and economic future was largely based on his or her family and background. Recognizing that exceptions were possible, in general, children of wealthy parents could expect to become wealthy adults and factory workers' children would likely become factory workers (Camp, 1983; Wirth, 1972).

Measurement Theory

In the field of psychology, measurement theorists had come to believe that personal characteristics could be determined with great accuracy by means of appropriate tests or other measurement tools. The concept of intelligence and the idea of the intelligence quotient (IQ) became popular as well as the idea of measuring interests and abilities in other arenas (Camp, 1983; Wirth, 1972).

Behaviorism

The dominant learning theory of the time was behaviorism. Although behavioral learning theory clearly qualifies as grand theory, using Creswell's (1994) definition, behaviorism did not play a central role in the development of vocational education. Thus, we consider behaviorism to have played a supporting role in the vocational education drama. One tenet of behaviorist theory was that virtually any task could be analyzed into discrete subtasks and that those subtasks could be taught to students using specific procedures designed to create stimulus-response pairing in a linear fashion. Given that principle, then any person could be taught how to perform basically any task (Camp, 1983; Wirth, 1972).

Tracking

Snedden and Prosser believed that students should be sorted into educational tracks based on their probable destinies and provided with occupationally specific instruction. They should further be provided with instruction designed to help them understand their relative places in society and to appreciate the importance of all kinds of workers in a complex and socially efficient social and economic system (Camp, 1983; Wirth, 1972).

Dual Systems

Snedden and Prosser believed that general educators would not support an educational system, the basic intention of which was to prepare workers for existing jobs in industry, farms, and the home. Thus, they contended that vocational education must systematically separate itself from the general education system and that it must be administered by different people using different rules than those under which general education was administered (Camp, 1983; Camp & Hillison, 1984; Wirth, 1972).

Instruction Based on the Real World

Students must learn to work in realistic settings. Idealists such as John Dewey (Dewey, 1924) held that the role of education was to liberate students for a better, more democratic society. Prosser and others contended that the best way to liberate students was to provide them with the tools (skill set and attitudes) necessary to achieve economic independence and productive citizenship in an efficient social and economic system (Prosser & Allen, 1924; Prosser & Quigley, 1949). The latter argued that teaching students how things "should be" in their work would serve only to create unrest among workers and inherent inefficiencies into what should be a smoothly functioning social and economic system (Camp, 1983; Camp & Hillison, 1984; Wirth, 1972).

If we put together all of those theories, we arrive at a very clear theoretical framework for vocational education of that era. We can easily surmise the theoretical basis for Prosser's Sixteen Theorems which then provided an operational basis for practice in the profession.

Prosser's Sixteen Theorems

As an education leader and administrator, Charles Prosser would not have been particularly concerned with grand theory or even middle-level theory. Instead he would have been concerned with day-to-day explanations for day-to-day problems. Thus, his theorems, or guidelines, as Doty and Weissman (1984) called them, can be seen to be substantive theory as defined by Creswell (1994). Summaries of Prosser's Sixteen Theorems can be found in a number of different sources from the early to mid-1900s. One such summary was included in Camp and Hillison (1984).

1. Vocational education will be efficient in proportion as the environment in which the learner is trained is a replica of the environment in which he [sic] must subsequently work.

2. Effective vocational training can only be given where the training jobs are carried on in the same way, with the same operations, the same tools, and the same machines as in the occupation itself.

3. Vocational education will be effective in proportion as it trains the individual directly and specifically in the thinking habits and the manipulative habits required in the occupation itself.

4. Vocational education will be effective in proportion as it enables each individual to capitalize his interests, aptitudes, and intrinsic intelligence to the highest degree.

5. Effective vocational education for any profession, trade, occupation, or job can only be given to the

selected group of individuals who need it, want it, and are able to profit by it.

6. Vocational training will be effective in proportion as the specific training experiences for forming right habits of doing and thinking are repeated to the point that these habits become fixed to the degree necessary for gainful employment.

7. Vocational education will be effective in proportion as the instructor has had successful experiences in the application of skills and knowledge to the operations and processes he undertakes to teach.

8. For every occupation there is a minimum of productive ability which an individual must possess in order to secure or retain employment in that occupation.

9. Vocational education must recognize conditions as they are and must train individuals to meet the demands of the "market" even though it may be true that more efficient ways for conducting the occupation may be known and better working conditions are highly desirable.

10. The effective establishment of process habits in any learner will be secured in proportion as the training is given on actual jobs and not on exercises or pseudo-jobs.

11. The only reliable source of content for specific training in an occupation is in the experiences of masters of that occupation.

12. For every occupation there is a body of content which is peculiar to that occupation and which practically has no functioning value in any other occupation.

13. Vocational education will render efficient social services in proportion as it meets the specific training needs of any group at the time that they

need it and in such a way that they can most
effectively profit by the instruction.

14. Vocational education will be socially efficient in
proportion as in its methods of instruction and its
personal relations with learners it takes into
consideration the particular characteristics of any
particular group which it serves.

15. The administration of vocational education will be
efficient in proportion as it is elastic and fluid rather
than rigid and standardized.

16. While every reasonable effort should be made to
reduce per capita cost, there is a minimum level
below which effective vocational education cannot
be given, and if the course does not permit this
minimum of per capita cost, vocational education
should not be attempted. (p. 15-16)

A Concise Restatement of
the Theoretical Framework

The ultimate goal of society is to benefit the members of
that society, and the optimal way to achieve that goal is by
building an efficient social and economic system. At
maximum efficiency, a social and economic system is socially
and economically stratified. An efficient system maintains
social control largely on the basis of voluntary conformity on
the part of its members with an accepted set of social norms.
A person's social class and occupation are based on
measurable factors and can be predicted, given appropriate
measurement tools. An effective educational system is at the
heart of an efficient system. The proper role of schools in an
efficient system is to sort youth into educational tracks based
on their probable destinies. Once sorted into appropriate
educational programs, the students are to be inculcated with
an understanding of a set of acceptable social norms and
provided with academic and occupational skills appropriate
for their probable destinies. General educators are not well
suited by temperament or philosophy to deal with education

for work, so a separate educational system for vocational education is necessary. In that separate system for vocational education, the principles of learning theory based on behavioral science can be used to establish pedagogies that allow for the effective transfer of attitudes and skills needed for productive citizenship in an efficient society.

As we stated earlier, no single person seems to have assembled a coherent theoretical framework for vocational education in the early 1900s. Yet by retroactively examining the dominant social, economic, and psychological theories of the time and concatenating those theories with the contemporary practical guidelines, we believe that we have been able to surmise a cogent theoretical framework. Beginning with the grand theory of social efficiency, that theoretical framework leads inexorably to Prosser's Sixteen Theorems. The Theorems provided a direct and simple set of operational guidelines for program designers and administrators in the early to mid-1900s.

Theoretical Foundations in the Late Twentieth Century

Similarly, no coherent theoretical framework for vocational education (later called career and technical education) in the last quarter of the 20th century can be found. Indeed, as Doty and Weissman (1984) wrote, "Vocational education does not appear to have a theoretical basis" (p 5). Some would argue that Rupert Evans and Edwin Herr provided a theoretical framework in their very influential book on the *Foundations of Vocational Education* (Evans & Herr, 1978) that many of us used as a text for foundations courses in the 1970s and 1980s. The Evans and Herr book provides a detailed look at a number of philosophical and theoretical propositions that served as a basis for vocational education as it was practiced at the time. More recently, Howard Gordon authored another foundational book, *The History and Growth of Vocational Education in America* (Gordon, 2003) that provides an excellent

look at the historical development and current status of career and technical education. In both the Evans and Herr book and the Gordon book, the authors' purposes were to provide a broad foundational grounding for professionals in vocational education, not to provide a theoretical framework (i.e., a concise train of logical statements that begins with a theoretical premise as its basis and then proceeds through a rational series of supporting theories, research, or premises that lead inexorably to the guiding principles of the profession).

Yet, one can find Prosser-like sets of principles that received general agreement in the vocational education community in the 1970s and 1980s. In the early 1970s, Mel Barlow (1974) edited the fourth annual yearbook of the American Vocational Association in which he proposed a set of principles to provide a foundational basis for practice in vocational education in the late 20th century. Barlow (1974) wrote, "It is possible to suggest a number of the fundamental ideas that have withstood, and probably will continue to withstand, the test of time" (pp. 19-20). He went on to delineate seven enduring principles of vocational education, hypothesizing that they were still valid in the last quarter of the century. For a complete look at his paper, see Barlow (1974) or for more a concise summary of Barlow's "enduring principles," see Doty and Weissman (1984, p. 8).

Just over a decade after Barlow's paper, as an Advanced Study Fellow for the National Center for Research in Vocational Education Mel Miller proposed an organized philosophy and set of guiding principles for vocational education (Miller, 1985) that went beyond Barlow's simple analysis of historically significant principles. Miller's proposition was an attempt to provide not only a Prosser-like set of guiding principles but to base those principles on a specific epistemological foundation, namely the philosophy of pragmatism. For a complete look at Miller's principles, see Miller (1985).

A Theoretical Framework for
Secondary Level Career and Technical Education
in the Early 21ˢᵗ Century

All of the preceding discussion brings us to today. Is there a coherent, cogent theoretical framework for career and technical education today in the first decade of the 21ˢᵗ century? If such a framework exists, we have not seen it and cannot find it. We conclude that no serious attempt at establishing a theoretical framework for the profession has been undertaken.

In the process of deducing what the theoretical framework for vocational education must have been some 80 years ago, we have two advantages. First, one man, Charles Prosser, played a pivotal role in designing vocational education, and he left us with a simple set of theorems from which we can extrapolate the underlying theories that must have served to guide his thinking. Second, we have the advantage of many decades of hindsight to fortify our thinking. Lacking a single intellectual focal point such as Prosser and lacking 8 decades of hindsight, we am forced to conclude that any theoretical framework or set of principles we can assemble today must be promulgated with much timidity and great tentativeness. Nevertheless, we can at least attempt to apply reason to an intractable question: What is and what should secondary-level career and technical education "be about" in the first quarter of the 21ˢᵗ century?

To build a cogent theoretical framework for a profession, we should begin with a single grand theory. We believe that social efficiency theory served as the grand theory underlying Prosser's vision of vocational education. After much thought, we now believe that human capital theory best serves as the fundamental theoretical premise of contemporary career and technical education. Beginning with human capital theory as our foundation, we must consider the political milieu in this country that resulted in the current educational reform movement, the educational accountability

movement that now has escalated to include direct measurement of student outcomes in the form of high stakes testing. We must also consider the economic and social changes that led up to the SCANS report and its impact on the shift from vocational education that prepares entry-level workers for employment to career and technical education that integrates academics and occupational instruction, increases student achievement in academics as measured by high stakes testing, and increases critical thinking skills. In light of all of those external pressures as well as pressures from within the profession, vocational education has undergone remarkable changes in the last 2 decades, and we must consider what the "new vocational education," career and technical education, actually looks like today. Finally, in light of all of those elements, we must acknowledge and embrace a shift from behaviorism to constructivism as the basis of our curriculum and pedagogy.

Human Capital Theory

In the past, the input of human workers was largely treated as a material component of the production process (Hornbeck & Salamon, 1991). Changes in the role of technology in the American economy since Prosser's days have caused a change in the type of labor the workforce requires today. Prosser wrote of the "privates of industry" (Wirth, 1972) but today the focus in our economy has shifted from the "brawn" of human labor to the "brains" of human labor (Hornbeck & Salamon, 1991). The role of the unskilled worker is becoming less important in our economy while the skills, knowledge, and abilities of workers are becoming more valuable (Becker, 1965). Human capital exists in many forms. Improvements in education, health, and training of employees increase their value to an employer and the community at large. Human capital is unique in comparison to other types of capital. Unlike other types of capital, associating a dollar value with human capital is very difficult. Traditional capital is bought, sold, or consumed, whereas

human capital is vested in and is almost permanent to the person who acquires it (Becker, 1965).

The fundamental ideas of human capital theory date back to the 1600s with Sir William Petty, who was one of the first to try to estimate the money value of a human being (Kiker, 1966). In the 1800s, several different methods surfaced for determining the monetary value of humans as a production input. This effort turned out to be a most difficult and unreliable procedure then and would be socially unacceptable now (Kiker, 1966). In the 1900s these ideas resurfaced with a slightly different variation. Economists began looking at the value of humans in comparison to other forms of capital and the costs and returns involved with human resources. Depending on their accepted definition of capital, some theorists, including Adam Smith and John Stuart Mill, did not include human beings as capital but only their skills. Their contemporaries, Johann H. von Thunen and Irving Fisher clearly did include human beings in their definition of capital (Kiker, 1966). Others, including economist Alfred Marshall, discarded the idea altogether as "unrealistic" (Kiker, 1966). Human capital theory remained in the background of economic thought for centuries but has more recently moved to the foreground with the work of modern economists Theodore W. Schultz and Gary S. Becker.

The concept of human capital is said to have been "'reborn" with Schultz's presidential address to the American Economic Association in 1960 (Kiker, 1971). In his address, Schultz named investments in human capital as the major explanation for observed increases in national output. Schultz's assertion stimulated a proliferation of research on the topic, and thought on the "value of human beings" began anew (Kiker, 1971). Gary S. Becker was the major player in reformatting modern thought on human capital to a human capital theory in the 1950s. Published in 1965, Becker's book, *Human Capital: A Theoretical and Empirical Analysis, With Special Reference to Education,* is the culmination of 9 years of research

and studies. It contains mathematical data on the implications of investment in human capital. In simplest terms, Becker's findings are that more educated and skilled employees make more money (Becker, 1965) and, by extension, create more wealth. Becker's research on the human capital theory provides concrete evidence to link investments in human resources to long- term benefits and cultural advantages. The work of these two men, Schultz and Becker, brought the ideas of human capital back into common thought and changed the way we think about the value of people in the workplace and community at large.

The modern technological movement increases the demand on the nation's educational sector to produce a knowledgeable, skilled workforce. Education includes not only schooling in the most obvious sense, but also on and off the job experience and training. Schooling is arguably the most advantageous form of education based on the idea that college graduates are more capable than high school graduates; high school graduates are more capable than middle school graduates; and so on (Becker, 1965). This shift puts an emphasis on education in a college, or at least postsecondary, setting versus solely a high school education. As workers become more educated, they become more capable; wages increase, and employment increases (Becker, 1965). Education increases productivity and increases an individual's value to the employer, improving productivity of the workplace, wages, and job security (Becker, 1965). Education undoubtedly has both cultural and financial advantages; the difficulty is estimating the costs associated with investments in education.

Once an individual's education is complete, an immediate wage increase ensues (Becker, 1965). These wages are much higher than what would have been earned without education, and they continue to increase at a higher rate compared to those who were not educated to the same degree (Becker, 1965; H.P. Miller, 1960). Research by Becker and Herman P. Miller indicates a higher total lifetime earnings

for educated workers that increases with the degree of education (Becker, 1965; H.P. Miller, 1960). The future value of the knowledge gained must compensate for all losses, both opportunity costs and direct costs, or employees have no incentive to bear that burden (Schultz, 1963). These costs are high and demanding on the employee, but society wants people to attain higher education and therefore allows it to be highly subsidized at a cost to the public.

The benefits of all types of education not only affect the future of the individual person, but the community as a whole. Education and training produce material and cultural advantages that cannot be assigned a dollar amount (Miller, 1960). These advantages may often be well worth the investment of time, effort, and money without the added economic advantages. Our lack of ability to calculate cultural advantages forces us to focus only on the economic advantages of education (H.P. Miller, 1960). Most of these are associated with years of education and include personal satisfaction in life and becoming a well-respected member of the community.

Education and the Economy

Workforce 2000. The Secretary of Labor formed a commission to look at the kinds of workers that would be needed to maintain a competitive American economy at the turn of the new millennium. *Workforce 2000*, published in 1987, identified a profound shift in the kinds of worker the schools needed to be preparing (Hartley, Mantle-Bromley, & Cobb, 1996).

Goals 2000. In 1989 President Bush convened an "Education Summit" of state governors with the objective of redirecting education in this country. The report of that summit was entitled *Goals 2000* and charged our schools to "change the national educational emphasis from process to performance, from complacency to high expectation" (Hartley et al., p. 27).

Secretary's Commission on Achieving Necessary Skills (SCANS). In 1990 the Secretary of Labor under President Clinton appointed a commission to reexamine the role of schools in preparing young people to succeed in the world of work. The commission was charged to determine what schools should be doing to encourage a high-performance economy that employs high-skill workers in high-wage occupations. The commission submitted several reports, concluding its formal work in 1992. The body was formally referred to as the Secretary's Commission on Achieving Necessary Skills but came to be known as the SCANS Commission (Hartley et al., 1996).

The SCANS report identified five workplace competencies and three foundational skills and personal qualities required in the high-performance workplace characterizing the modern economy. That report provided the following charge to American schools.

COMPETENCIES effective workers can productively use:

- Resources - allocating time, money, materials, space, and staff;

- Interpersonal Skills - working on teams, teaching others, serving customers, leading, negotiating, and working well with people from culturally diverse backgrounds;

- Information - acquiring and evaluating data, organizing and maintaining files, interpreting and communicating, and using computers to process information;

- Systems - understanding social, organizational, and technological systems, monitoring and correcting performance, and designing or improving systems;

- Technology - selecting equipment and tools, applying technology to specific tasks, and maintaining and troubleshooting technologies.

THE FOUNDATION - competence requires:

- Basic Skills - reading, writing, arithmetic and mathematics, speaking, and listening;

- Thinking Skills - thinking creatively, making decisions, solving problems, seeing things in the mind's eye, knowing how to learn, and reasoning;

- Personal Qualities - individual responsibility, self-esteem, sociability, self-management, and integrity. (Secretary's Commission on Achieving necessary Skills, 1991, p. iii)

Educational Reform Movements

A Long History of Educational Reform. At any given time since Colonial days, American education has been in a near-continuous series of reform movements. Those reform movements sometimes tend to swing toward less restrictive and more student-centered educational programs, such as the Progressive School movement and Dewey's Laboratory Schools in the 1920s and 1930s (Meyer, 1957) and the Career Education movement of the 1970s (Bailey & Stadt, 1973). On other swings of the pendulum, the reforms tend more toward a rigid focus on subject matter and accountability, as seen in the Report of the Committee of Ten in 1893 (Eliot et al., 1893), resulting in a restructuring of high schools in this country which emphasized the basics of science, mathematics, language, and social studies (Meyer, 1957).

Excellence Movement. Like the 1893 report of The Committee of Ten, the current educational reform movement in America again centers on strengthening our schools'

performance in teaching the so-called "basics," and most educators trace the movement's origins to the publication of *A Nation at Risk*, in April 1983. All of us who lived through those turbulent years remember the opening paragraphs in that report (National Commission on Excellence in Education, 1983) which stated, in part:

> Our Nation is at risk. Our once unchallenged preeminence in commerce, industry, science, and technological innovation is being overtaken by competitors throughout the world the educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a Nation and a people. Our society and its educational institutions seem to have lost sight of the basic purposes of schooling, and of the high expectations and disciplined effort needed to attain them. This report, the result of 18 months of study, seeks to generate reform of our educational system in fundamental ways and to renew the Nation's commitment to schools and colleges of high quality throughout the length and breadth of our land.

Reform of Teacher Education. The excellence movement in the early 1980s aimed at reforming curriculum through increasing the emphasis on core academic courses in schools. That goal was to be accomplished by increasing the academic course requirements for high school graduation. Proponents of the excellence movement believed that much of the perceived problem in our schools was a result of poorly prepared teachers (Holmes Group, 1986). The result of that belief was a major movement, driven largely by the same groups of people that advocated the excellence movement, to reform teacher education programs in the nation's colleges and universities (Holmes Partnership, 2004). The reform efforts typified by the Holmes Group involved requiring all teachers to hold degrees in the subjects they would teach and moving teacher education programs from the undergraduate to the graduate level (Holmes Group, 1986), effectively eliminating the undergraduate education degree in many

institutions. Accompanying political efforts at state levels resulted in increased requirements for discipline-specific coursework and concomitant reductions in pedagogical preparation. A simultaneous effort to increase requirements for teaching certification involved the requirement for standardized examinations for teachers, primarily emphasizing basic skills on the part of the teacher along with content area expertise. Typical of those examinations are the Praxis I and Praxis II. The Educational Testing Service (2004) described those two examinations as follows:

> Praxis I: Academic Skills Assessments are designed to be taken early in a student's college career to measure reading, writing, and mathematics skills. The reading, writing, and mathematics assessments are available through either a paper-based or computer-based format.

> Praxis II: Subject Assessments measure candidates' knowledge of the subjects they will teach, as well as general and subject -specific pedagogical skills and knowledge. The pedagogy assessments, Principles of Learning and Teaching, are included in this group (retrieved September 27, 2005, from http://www.ets.org/praxis/).

High Stakes Testing. Attempts to reform American education have traditionally been tied to political swings in the country and accordingly have tended to be short lived. Previous attempts from either the political left or the political right have generally failed for any of a number of reasons, not the least of which is that they have tended to focus on changing how teachers are prepared, how teachers teach, what curriculum students actually receive, or how schools are structured, all of which have proven to be extremely intractable (Vallely, 2003).

The reform movement currently underway has taken a very different tack from previous movements in that student outcomes are being targeted by means of standardized, high stakes testing. Vallely (2003) wrote, "In essence, unlike any time in history, assessments have become the centerpiece of reform; designed to play a crucial role in guiding instruction, monitoring performance, providing improvement data, and holding schools accountable" (p 43). The essential outcome of the high stakes testing movement has been to provide impetus to the "excellence movement" just as it seemed on the verge of yet another failure (Vallely, 2003).

No Child Left Behind. The Bush No Child Left Behind (NCLB) program, as proscribed in PL 107-110, combines elements of the excellence movement, the reform of teacher education, and high stakes testing in an unprecedented way. NCLB capitalizes on the same marketing ploy as the two opposing sides in the abortion debate in this country by using an unassailable name to represent a program. Anti-abortion becomes "Pro-Life" and pro-abortion becomes "Pro-Choice." Who can argue against "Life" or "Choice." By the same logic, a program that expends massive amounts of local and state monies and countless hours of instructional time on inane student testing and that requires more rigid teacher licensure requirements when the real problem is getting enough qualified teachers becomes "No Child Left Behind." What educator can argue that we should "leave a child behind?" The NCLB requires:

- Annual testing of all students against state standards in reading and mathematics in grades 3-8 and in science at three times in a student's school career (including once in high school).

- "Verification" of each state's assessment system via required participation (every other year) by selected districts in the NAEP test.

- Aggregate and disaggregate analysis and reporting of student achievement results.

- A state definition and timeline for determining whether a school, district and the state are making "adequate yearly progress" (AYP) toward the goal of 100 percent of students meeting state standards by the 2013-2014 school year.

- Technical assistance and then sanctions for schools, districts and the state for failure to make AYP.

- Highly qualified teachers in core academic subjects by 2005-2006.

- Highly qualified aides or paraprofessionals.

- Support for students not meeting standards and/or for those who have special needs (e.g., homeless, limited-English-proficiency).

- The use of "scientifically-based" programs and strategies. (Illinois State Board of Education, 2004)

The "New" Vocational Education

What Prosser envisioned in the early 1900s was a vocational education that prepared the "privates of industry" for skilled occupations in factories and business, as farmers, and as homemakers (Wirth, 1972). That mission began to change in the 1960s when the Vocational Education Act of 1963 expanded our definitions of vocational education. It changed even further every time a new piece of federal enabling legislation was passed, up to and including the latest iteration of the Perkins Act (Gordon, 1999; Old Dominion University, 2004)

Today, career and technical education (CTE) looks very different from Prosser's vision for the field. For nearly a century, secondary-level vocational education has been offered mostly in area vocational centers (under a variety of names and configurations) and comprehensive high schools. Most CTE is still delivered in such settings, but today we find programs in career academies, magnet schools, school-within-a school, and other non-traditional configurations (Old

Dominion University, 2004). Regardless of the configuration, CTE programs are becoming more academically rigorous and less directly tied to single occupations. CTE is no longer just a training program for workers; today CTE also prepares students for postsecondary work including college as well as for lifelong learning. CTE does not replace academic subjects, but rather reinforces academic instruction by incorporating basic academic instruction in a purposeful way into CTE courses. CTE provides meaningful contexts in which students can apply the concepts they learn in academic classrooms in settings that help them to see the real-world relevance of what might otherwise be abstract concepts. CTE teachers and academic teachers are working collaboratively in integrated teaching teams to provide learning experiences that combine academic and CTE instruction into a meaningful conceptual whole (Old Dominion University, 2004).

Leaders in the U.S. Department of Education attempted to implement a cluster approach to vocational education in the 1970s, with only marginal success. Today, under U.S. Department of Education leadership, the state directors of career and technical education are moving aggressively forward on a later vision for refocusing career and technical education around career clusters rather than single occupations or groups of occupations. If successfully implemented, the concept of career clusters can be expected to lead to a partial blurring of some of the lines between the traditional vocational service areas at the secondary level, much as Copa and Plihal, of the University of Minnesota's vocational education program envisioned:

> Currently, vocational education at the secondary
> level is a rubric for a variety of courses, but it is
> not a broad field area of study. If the areas of
> vocational education that are now treated as
> discrete areas of knowledge were united into an
> area of study that focused on understanding
> their interrelationships, we could create the

broad field of vocational education (Copa &
Plihal, 1996, p 98).

Constructivism as the Basis for our Pedagogy

We believe that the last and a very basic piece of the
theoretical puzzle for career and technical education involves
learning theory. Behaviorist theory was essential to the early
development of vocational education. The principles of
behaviorist theory led directly to task analysis, which in turn
led to competency-based education (Dobbins, 1999).
Behaviorist principles formed much of the basis for the
linear, task-oriented pedagogy that has characterized career
and technical education instruction for most of the past
century (Doolittle & Camp, 2003).

As the requirements for our graduates have evolved
over time from their being compliant workers to being
critically-thinking problem solvers, so too has our acceptable
curriculum building and instructional delivery systems. We
would never contend that the pedagogy envisioned by radical
constructivists (Doolittle & Camp, 2003) can ever
satisfactorily inform instruction in the more technical or
linear aspects of practice-based programs or curricula such as
those directed toward occupational preparation. Nevertheless,
the rigid instruction that is the natural outcome of
behaviorist-based pedagogy is simply inadequate to produce
the kinds of graduates demanded by our society and economy
today as typified in the SCANS Report, Goals 2000, and
other subsequent major documents (Hartley et al., 1996).

A Concise Restatement of the Theoretical Framework

If our argument is correct, the fundamental premise
under-girding career and technical education as practiced in
the first half of the opening decade of this millennium is
human capital theory. That theory stipulates that schooling is
a fundamental building block of our entire economy and
social structure. Extended schooling for individuals translates

directly into economic growth for the entire system and financial and other rewards for the individual in the form of an improved living standard and higher levels of job and personal satisfaction. Our schools are now called upon to help prepare critically-thinking, problem-solving, self-regulating graduates who can function in high-performance occupations as a part of a high-performance social system. Given the rapidly changing nature of such a high performance system, workers today must be prepared to move and adapt rapidly among broad families of occupations that exist within career clusters and even across career clusters. Career and technical education can be a critical component of that educational system to the extent that it provides students with generalizable skills packages, including but not limited to occupational skills that are applicable to broad clusters of careers. Beyond a broader perspective for occupational preparation, and given that our system demands higher levels of basic skills than ever before, career and technical education must also contribute to the academic achievement of our students in the basic academic areas. Simple, hands-on application of work-related skills does not contribute in a meaningful way to helping meet the rigorous demands being placed on students today by the excellence and accountability movements. Recognizing that some tasks must be completed in precise ways, some aspects of our curriculum and of our pedagogy must remain linear. But our teachers must increasingly become knowledge and skill development facilitators rather than purveyors of lock-step tasks. Teacher-centered pedagogy based solely on detailed task analysis and rigidly structured, linear, competency-based instruction is no longer adequate, and we must increasingly place responsibility for student learning on the student in a setting requiring inquiry and collaboration.

A Missing Piece

Clearly the foregoing is not a complete theoretical framework for career and technical education as practiced in this country today. On the other hand, we believe that the

proposed framework provides *a concise train of logical statements that begins with a theoretical premise as its basis and then proceeds through a rational series of supporting theories, research, or premises that lead inexorably to the guiding principles of the profession.* What this discussion does not address is a set of guiding principles in the mold of those proposed by Prosser, Barlow, and Miller, respectively. If scholars in career and technical education could reach consensus on a theoretical framework for the profession, then generating a set of guiding principles should be possible.

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CHAPTER THREE

The Changing Environment of Career and Technical Education Leadership Development in the United States

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The preparation of leaders for career and technical education (CTE) is an urgent need requiring immediate action. Not only do vacancies exist in current leadership positions and will continue to increase, but the leadership pipeline is experiencing the shortage as well. A large proportion of education administrators are expected to retire over the next 10 years. Many of these are principals or superintendents of career and technical education centers/schools/programs. Leaders with strong leadership skills are critical for the future of career and technical education. This chapter will address the upcoming workforce crisis in America, the shortage of education administrators, developing CTE leaders, domestic changes that impact leadership, and federal laws that influence the activities of CTE leaders. Additionally, this chapter will provide a conceptual framework for leadership programs; illustrate the status of leadership programs related to CTE; identify implications for planning, implementing and evaluating leadership programs; and finally, present policy recommendations for local, state, and national levels to address the leadership crisis.

The Upcoming Workforce Crisis in America

Millions of jobs are going unfilled in business and industry due to the shortage of qualified candidates—jobs

that offer excellent salaries, stimulating work, and advancement potential. Homeowners are finding it difficult to hire skilled contractors, electricians, and plumbers. Examples of employment opportunities abound (Challenger, 2003, Eisenberg, 2002). For example, more than 425,000 workers are needed in the information technology area now, and more than 1.2 million will be needed by 2005. More than 60,000 service technicians are needed in the automotive industry where salaries range from $30,000 to $100,000 a year. In the air conditioning and refrigeration area, 22,000 jobs are available. The construction industry is reporting more than 250,000 available jobs with the top carpenters, bricklayers, roofers, and painters making nearly $100,000 a year. The hospitality, healthcare, printing, transportation, and manufacturing industries are facing moderate to severe shortages. In the manufacturing area, 2 million jobs will be available in the next decade due to retirements, with many jobs for welders, tool- and die-makers, line managers, and others paying more than $50,000 a year. Law enforcement agencies want to hire thousands of individuals at salaries of $40,000 a year. The oldest members of the baby-boom generation are now in their late 50s, and as they start retiring, job candidates with the right skills will be in high demand. Hecker (2001) reported that total employment would increase to 167.8 million jobs by 2010. During this same time period, Fullerton and Toossi (2001) indicated that the civilian labor force is projected to reach 158 million—a shortage of approximately 10 million employees.

The Shortage of Education Administrators

The U.S. is also facing a rapidly declining reservoir of experienced educational leaders. In public education at the elementary, middle, and high school levels, the National Center for Education Statistics (2003a) reported that 54% of principals are above the age of 50 and have about 25 years of experience. Principals have significant effects on school climate and student outcomes (Educational Research Service, 2000; Sebring & Bryk, 2000). Fullan (2001) indicated that

principals are important initiators or facilitators of continuous school improvement. Yet, despite a wave of impending retirements and chronic difficulties in finding candidates, few school districts have made identifying and grooming potential leaders a priority (Olson, 2000). Directors of career education programs are often considered principals or superintendents, and the above statistics would be applicable to them as well.

Shults (2001) indicated that at the postsecondary level, 45% of the current community college presidents plan to retire by 2007, and the number of advanced degrees conferred in community college administration decreased 78% from 1982–1983 to 1996–19997. The National Center for Education Statistics (NCES, 2001) found 30% of the faculties in community colleges to be at least 55 years old, and 52% of respondents between the ages of 55 and 64 planned to retire by 2004. As was the case with public schools, career education leaders are included in these statistics for postsecondary institutions. The National Council for Workforce Education (2003) reported that 26% of its membership plans to retire within the next 5 years.

State leadership for career and technical education is not exempt from this shortage. Kister (2001) indicated that the average time spent in the role as a state director of career and technical education is about 3 years. She also stated that a new type of leader is needed. Not only the traditional leadership and management responsibilities are in that leadership role, but now the additional responsibilities include that of leading change, being an instructional leader, managing multiple priorities, managing in a political environment, being sensitive to diverse cultures, bridging education with business and industry, doing more with less, working collaboratively both within and outside the agency, and advocating for career and technical education. The immediate and future shortage of career and technical education leaders is of grave concern.

Developing CTE Leaders

The development of educational leaders to meet the needs of our citizenry is a difficult task. Goodlad (2002) stated, "The most dismayingly scary characteristic of the current school reform era is the preoccupation with simplistic prescription devoid of diagnosis and purpose" (p. 23). Goodlad went on to indicate that Americans have repeatedly specified a preference for schools that develop personal, social, vocational, and academic attributes.

Developing the next generation of career and technical education leaders will require close cooperation between academic and career and technical education administrators and instructors. Career and technical education, along with the rest of the education enterprise, is facing a rapidly changing external and internal environment. Rojewski (2002) reported that "work, family, and community life, coupled with persistent calls for educational reform over the past several decades, present numerous challenges to professionals in career and technical education" (p. 1). The factors in the external and internal environment require constant attention as career and technical education leaders plan, implement, and evaluate their programs.

In order to begin a discussion on developing the next generation of leaders for career and technical education (CTE), it is important to establish a clear definition of terms. The definitions of leaders and leadership in CTE are essential in this process. Gardner (1995) defined a leader as "an individual who significantly affects the thoughts, feelings, and behavior of a significant number of individuals" (p. ix). For the purpose of this paper, leaders in CTE are defined as those who earn the respect of individuals, stress obtaining higher core indicators of performance to assess CTE program effectiveness and improve the secondary and postsecondary outcomes of students who pursue CTE, act with honesty and integrity, and extend CTE thinking beyond the status quo. This definition includes individuals who hold positions of

authority as well as opinion leaders in the internal and external environment impacting CTE.

Kotter (1996) defined leadership as "a set of processes that creates organizations in the first place or adapts them to significantly changing circumstances. Leadership defines what the future should look like, aligns people with that vision, and inspires them to make it happen despite the obstacles" (p. 25). Leadership in CTE requires individuals to collaborate with others (e.g., parents, students, educators, and business representatives) in envisioning and creating effective and efficient CTE programs.

To become leaders, career and technical educators must find time to examine, analyze, debate, and evaluate issues related to their policies and practices. Most jobs, including those in CTE professions, now require some level of proficiency in the use of technology. These prospective leaders need a learner-centered model of leadership development that recognizes schools and community colleges as complex organizations, learning as an interactive process, and prospective leaders as competent learners. The use of learner-centered professional development programs delivered through face-to-face meetings and distance communication technology, including the use of teleconferencing, listservs, chatrooms, and downloadable information, is strongly recommended. Creating change in secondary and postsecondary education also requires visionary leaders who understand changing demographics, identify the needs of individuals and future employers, understand policy development processes, and lead educational reform.

Domestic Changes that Impact Leadership

A number of other domestic changes have also impacted leadership. Some of the more important changes include the ongoing need for educational reform, increasing diversity of our population, growing dependence on

technology, changing social values, shifting family structures, increasing competitiveness for resources, and continuing urbanization.

Businesses, industries, governmental agencies, and other organizations are calling for educational reform. Employers are seeking individuals with high academic, technical, and employability skills (e.g., punctuality, teambuilding, writing, and speaking).

Federal Laws That Impact CTE Leaders

The activities of leaders in career and technical education are influenced by federal legislation. These laws include the Carl D. Perkins Vocational and Technical Education Act Amendments of 1998 and the No Child Left Behind Act of 2001.

The Carl D. Perkins Vocational and Technical Education Act Amendments of 1998 were signed into law on October 31, 1998. These amendments required each state to identify core indicators of performance that included, at a minimum, measures of each of the following:

- student attainment of challenging state established academic, and vocational and technical, skill proficiencies;

- state adjusted levels of performance and state levels of performance recognized equivalent, a proficiency credential in conjunction with a secondary school diploma, or a postsecondary degree or credential;

- placement in, retention in, and completion of, postsecondary education or advanced training, placement in military service, or placement or retention in employment; and

- student participation in and completion of vocational and technical education programs that lead to nontraditional training and employment.

States, with input from eligible recipients, could also identify in the state plan additional indicators of performance for vocational and technical education activities authorized under the Carl D. Perkins Vocational and Technical Education Act Amendments of 1998. States that had previously developed state performance measures that met the requirements of core indicators could use these measures to gauge the progress of vocational and technical education students.

The No Child Left Behind Act of 2001 was signed into law on January 8, 2002. This law focuses on four basic education reform principles: stronger accountability for results, increased flexibility and local control, expanded options for parents, and an emphasis on teaching methods that have been proven to work. *Stronger accountability for results* requires states to be responsible for having strong academic standards for what every child should know and learn in reading, math, and science for elementary, middle, and high schools. Beginning in the 2002-03 school year, schools are required to administer tests in Grades 3-5, Grades 6-9, and Grades 10-12 in all schools. Beginning in the 2005-06 school year, tests will be administered every year in Grades 3 through 8. Beginning in the 2007-08 school year, science achievement will also be tested. *Increased flexibility and local control* gives states and local school districts greater say in using the federal education dollars they receive every year. Local people will have more say about which programs they think will help their students the most. Additionally, No Child Left Behind simplifies programs, so that schools do not have to cut through as much red tape to get and use federal funding. *Expanded options for parents* provide new ways to help students, schools, and teachers. It gives parents options for helping their children if they are enrolled in chronically failing schools. *Emphasis on teaching methods that have been proven to work*

allows the targeting of education dollars to research-based programs that have been proven to help most children learn. Federal dollars will be tied to programs that use scientifically proven ways of teaching children to read. Schools and teachers will get help from funds that allow schools to promote teacher quality through training and recruitment.

The Carl D. Perkins Vocational and Technical Education Act Amendments of 1998 and the No Child Left Behind Act of 2001 were written to help ensure equal access to education and promote educational excellence to help close the academic and technical skill gap between disadvantaged, minority, and majority students. The Carl D. Perkins Vocational-Technical Education Act Amendments of 1998 indicators of performance and the basic principles of the No Child Left Behind Act of 2001 are also similar (see Figure 1).

These federal laws require secondary CTE leaders to place emphasis on accountability—especially as it relates to the attainment of academic and technical skills, placement and retention in postsecondary education, advanced training, military services, or employment. To accomplish these outcomes, CTE leaders must have a broad set of knowledge, skills, and abilities.

For example, secondary CTE leaders should be able to develop appropriate mission and vision statements for their schools. They should also be able to model instructional leadership by providing professional development opportunities for faculty and staff and by demonstrating a knowledge of effective instructional strategies. A knowledge of curriculum is essential: The ability to match academic and industry standards to course content and to develop articulation agreements with postsecondary education programs are only two examples of tasks secondary CTE leaders must accomplish.

Carl D. Perkins Core Indicators of Performance Requirements	No Child Left Behind Basic Principles			
	Stronger Accountability for Results	Increased Flexibility and Local Control	Expanded Options for Parents	Teaching Methods Proven to Work
Student Attainment of Academic, and Vocational and Technical Skill Proficiencies	X			X
Student Attainment of Secondary School Diploma or its Recognized Equivalent, a Proficiency Credential in Conjunction with a Secondary School Diploma, or Postsecondary Degree or Credential	X	X	X	X
Placement in, Retention in, and Completion of Postsecondary Education or Advanced Training, Placement in Military Services or Placement or Retention in Employment	X	X		
Student Participation in and Completion of Vocational and Technical Education Programs that Lead to Nontraditional Training and Employment	X		X	

Figure 1. The relationship between the required indicators of performance in the Carl D. Perkins and the basic principles of the No Child Left Behind Act.

Program-planning skills such as those used with the benchmarking and continuous assessment of student and program progress are also needed. Helping students reach graduation and formulate relevant postsecondary education plans, along with providing all students with a variety of postsecondary options (i.e., 4-year colleges, technical schools, community colleges, and employment) is also important. It is readily apparent that the professional development of CTE leaders in all of these areas is an ongoing process and presents numerous challenges.

At the postsecondary level, CTE leaders must give greater attention to providing relevant professional development opportunities to administrators and faculty on workforce development issues. They also need to develop articulation agreements with secondary and higher education programs, provide advance standing for students who have already completed similar courses, develop curricula based on industry standards, and provide opportunities for students to acquire state and national credentials.

Conceptual Framework for
CTE Leadership Programs

In this section, the term *conceptual framework* refers to a general perspective or gestalt used to explain leadership development in career and technical education. A conceptual framework does not attempt to predict the relationship between concepts. Rojewski (2002) indicated that

> a conceptual framework does not necessarily
> solve all problems or answer all questions
> . . . but it should provide a schema for
> establishing the critical issues and allowing for
> solutions – either conforming the problem to
> the framework or vice versa (or perhaps both).
> Frameworks should be fairly stable but have the
> capacity to change over time and adapt to
> external forces. (p. 2)

The conceptual framework presented in this chapter (see Figure 2) is framed by two major concepts: the Interstate School Leaders Licensure Consortium (ISLLC) standards and a career and technical education knowledge base. Each of these influences will be discussed below.

Career & Technical Education (CTE) Leader Knowledge Base

- Developing a CTE Vision
- Establishing a CTE Culture
- Organizing CTE Advisory Councils
- Arranging for CTE Facilities
- Identifying CTE Funding Sources
- Integrating Academic, Technical and Employability Skill Based Instruction
- Organizing CTE Student Organizations
- Providing for Student Safety
- Developing Work Site Training Stations
- Transitioning Students to Postsecondary Options
- Working with Adult Learners
- Leading Change and Educational Reform in CTE
- Understanding Policy Development Processes

ISLLC School Leader Standards

- Facilitating School Vision
- Sustaining School Culture and Instruction
- Managing Operations and Resources
- Collaborating with Family and Community
- Providing Ethical Behavior
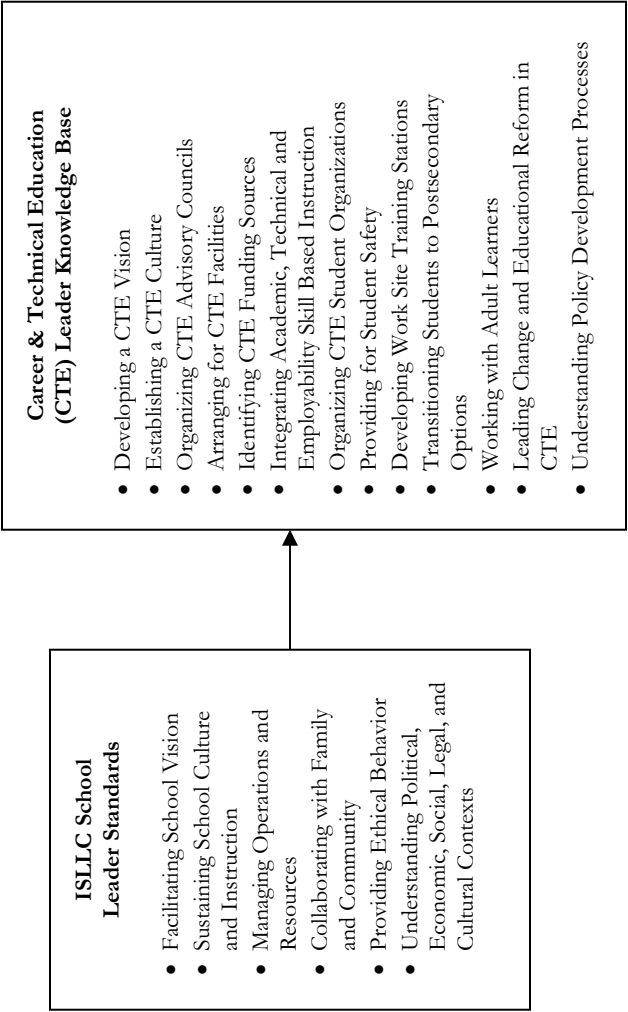- Understanding Political, Economic, Social, Legal, and Cultural Contexts

Figure 2. Conceptual framework for developing career and technical education leaders

ISLLC Standards

The Interstate School Leaders Licensure Consortium (ISLLC, 1996) has developed six standards that include what school leaders should know and be able to do. These standards were developed over a 2-year time period by individuals representing state education agencies as well as members of professional associations and are used as a basis for licensing school administrators in many states. These standards indicate that a school administrator is an educational leader who promotes the success of all students in the following ways:

1. facilitating the development, articulation, implementation, and stewardship of a vision of learning that is shared and supported by the school community (*facilitating school vision*),

2. advocating, nurturing and sustaining a school culture and instructional program conducive to student learning and staff professional growth (*sustaining school culture and instruction*),

3. ensuring management of the organization, operations, and resources for a safe, efficient, and effective learning environment (*managing operations and resources*),

4. collaborating with families and community members, responding to diverse community interests and needs, and mobilizing community resources (*collaborating with family and community*),

5. acting with integrity, fairness, and in an ethical manner (*behaving ethically*), and

6. understanding, responding to, and influencing the larger political, social economic, legal, and cultural context (*understanding the political, economic, social, legal, and cultural context*).

Facilitating school vision. A school vision refers to a desired future and a rationale as to why it is important to achieve. An educational leader needs to be dedicated toward high levels of performance that result in the success of all students and enable them to move into successful adult roles. The vision for a school needs to be accepted by employees, parents, and citizens.

Sustaining school culture and instruction. School culture refers to norms of behavior and shared values among school staff. Norms of behavior are consistent ways of acting that are either rewarded if they are met or sanctioned if they are not. Shared values refer to important concerns and goals that are shared throughout the school system. Educational leaders must believe that all students can learn and that teaching and learning are the basic purposes of schools.

Managing operations and resources. Managing schools require both the efficient and effective use of resources. Equitable allocation of resources such as personnel, facilities, and technology is essential if all students are to learn. Obstacles to teaching and learning need to be removed and teachers need to be empowered to take risks that will increase the likelihood of student success.

Collaborating with family an community. Collaboration refers to bringing individuals and groups together in an atmosphere of support and respect to work on issues and concerns related to teaching and learning. It is essential that collaboration occur if a school is to be successful in meeting the needs of all students and enabling them to succeed.

Behaving ethically. Behaving ethically requires school leaders to set the tone and do what is right. A school leader must act in ways that are consistent with personal and school values and purposes. Ethical behavior also requires school leaders to act in a manner that makes them proud of their decisions regardless of whether someone is looking or not.

Understanding political, economic, social, legal, and cultural contexts. School leaders must be able to understand and able to operate in a broad and diverse culture. These leaders need to be individuals who can see the "big picture" and influence this ever-changing environment. A key factor in this context is the leaders ability to communicate effectively with policy makers in this broad context.

Career and Technical Education
Leader Knowledge Base

In determining the knowledge base for career and technical education leaders one must begin with a definition of career and technical education. The National Association of State Directors of Career Technical Education Consortium (2003) indicated that career technical education is provided in a variety of settings and levels including middle school career exploration, secondary programs, postsecondary certificates and degrees, and customized training for employees in the workplace. Career technical education also provides students and adults with (a) the technical skills and knowledge necessary to succeed in occupations and careers; (b) the cross-functional or workplace basics necessary for success in any occupation or career (such as problem solving, teamwork, and the ability to find and use information) as well as skills for balancing family and work responsibilities; and (c) the context in which traditional academic skills and a variety of more general educational goals can be enhanced (p. 1).

Zirkle (2002) identified six areas of concern for administrators of career and technical education programs. These areas of concern included liability, program costs, teacher recruitment and licensure, funding, business/industry partnerships and labor market information, and transition services.

Norton (1995) identified 14 categories of competencies needed by vocational teachers. The categories included program planning, development, and evaluation, instructional

planning, instructional execution, instructional evaluation, instructional management, guidance, school-community relations, vocational student organizations, professional role and development, coordination of cooperative education, implementing competency-based education, servicing students with special/exceptional needs, assisting students in improving their basic skills, and teaching adults.

McCaslin and Parker (2003) included five major themes in the National Leadership Institute for Career and Technical Education. The institute was designed to help prepare current and future career and technical education leaders. The themes were (a)develop leadership capability, (b) understand policy development processes, (c) understand the culture and context in which programs operate, (d) delineate vision and mission statements, and (e) lead change and reform initiatives

The knowledge base for CTE leaders requires information beyond that recommended by ISLLC. The knowledge base for CTE includes developing a CTE vision; establishing a CTE culture; organizing CTE advisory councils; arranging for CTE facilities; identifying CTE funding sources; integrating academic, technical, and employability skill-based instruction; organizing CTE student organizations; providing for student safety; developing work site training stations; transitioning students to postsecondary options; working with adult learners; leading change and educational reform in CTE; and understanding policy development processes.

Developing a CTE vision. CTE leaders need to have a clear vision regarding the contribution that CTE can make to the overall vision of their school or college. This vision needs to indicate who CTE is involved with CTE, what CTE does, whom CTE serves, and why CTE exists. Additionally the vision needs to be memorable, compelling, and focused on serving students.

Establishing a CTE culture. CTE leaders must establish a teaching and learning culture that reflects the importance of student success in the school or college and in the workplace. Teaching and learning in CTE can provide relevance and meaning to instruction that can be lacking in other courses.

Organizing CTE advisory councils. One of the hallmarks of effective CTE programs is the use of advisory councils to help determine what is to be taught. Advisory council members also can provide work-based training sites and employment opportunities for students who complete the CTE program.

Arranging for CTE facilities. CTE courses often require the use of laboratories that reflect the type of environment that students will encounter when they enter the world of work. CTE leaders need to be knowledgeable about the requirements of the workplace in designing appropriate educational facilities.

Identifying CTE funding sources. Special funding is often available from federal and state sources for CTE instructional programs. At the federal level, laws such as the Carl D. Perkins Vocational and Technical Education Act Amendments of 1998, and the Workforce Investment Act of 1998 provide funding for CTE. States also can have specific legislation that provides funding for secondary CTE programs.

Integrating academic, technical, and employability skills-based instruction. CTE programs provide individuals with technical skills necessary to succeed in occupations and careers, employability skills necessary for success in any occupation or career (such as problem solving, teamwork, and the ability to find and use information) as well as skills for balancing family and work responsibilities; and the context in which traditional academic skills and a variety of more general educational goals can be enhanced. CTE leaders need to be able to design and implement these programs.

Organizing CTE student organizations. Student organizations are an integral part of CTE programs and are designed to help students develop their technical and employability skills. CTE leaders need to be knowledgeable about these organizations and how they can be used to help deliver instructional objectives.

Providing for student safety. Most CTE programs require that students to use tools and equipment that are dangerous if not operated safely. CTE leaders need to understand how to operate these tools and equipment as well as the safety requirements for operating the tools and equipment in both an educational and occupational environment.

Developing work site training stations. Not all of the learning environment can be provided within an educational system. In these cases, CTE leaders need to be able to determine the characteristics of work-site training stations and identify appropriate sites for additional teaching and learning.

Transitioning students to postsecondary options. According to Goodlad (2002), the American people have repeatedly specified they want schools that develop personal, social, *vocational* [italics added], and academic attributes. These attributes are needed by individuals regardless of whether they wish to pursue further education, enter apprenticeship training, or enter the workforce. Braddock (1999) indicated that occupations requiring an associate degree or more education will account for 50% of total job growth from 1998 to 2008. CTE leaders must be prepared to assist students meet these different types of career objectives.

Working with adult learners. The National Center for Education Statistics (2003b) indicated that "among persons age 16 and above (excluding traditional students), work-related courses were the most prevalent form of lifelong learning (30%)" (p. 25). CTE leaders need to be prepared to

work with adults as they develop programs to meet the needs of their communities.

Leading change and educational reform in CTE. Perhaps at no point in time has career and technical education faced more challenges than today. The need to develop educational programs that enable to meet the needs of the workplace and lifelong learning is ever present in career and technical education. Kotter and Cohen (2003) indicated, " The process of change involves subtle points regarding overlapping stages, guiding teams at multiple levels in the organization, handling multiple cycles of change, and more" (p. 6).

Understanding policy development processes. Educational policy making related to CTE occurs at the federal, state, and local level. As such, CTE leaders need to be prepared to use their political institutions to ensure that every student will be successful in life—whether becoming a plumber, computer technician, or physician. The political process in the U.S., unlike in some countries, is basically open to participation and shaping by those outside of the policy making process (Halperin, 2001). As such, CTE leaders need to be prepared to help shape how their programs are planned, implemented, and evaluated.

Status of Leadership Programs Related to Career and Technical Education

Almost a century ago, Ellwood Cubberly (1906) advocated for state standards for educational leaders. Standards had already been actively discussed and implemented for teachers by this time. By 1915, graduate programs in school administration had been developed (Callahan & Button, 1964). By 1937, 42 preparation programs existed (Moore, 1937). By the mid-1950s, 41 states required graduate work for administrator certification. In response to growing certification requirements, the number of administrator preparation programs nationally had grown from 125 in 1946 to 371 in 1994 (McCarthy & Kuh, 1997).

Secondary CTE Certification
and Licensure

Vocational education was the first area to have subject area differentiation in high school teaching certificates (Angus, 2001). States required special training in the areas of agriculture, home economics, and industrial arts before the academic subjects of English, math and science. Over 80 years ago, the Smith-Hughes Act required these specialized certifications in order to receive funding. Smith-Hughes also allocated funds for the supervision of agricultural programs, and "it soon became apparent that qualified supervisors were needed in each service (area) as a means of improving local programs of vocational education" (Roberts, 1957, p. 170). The Vocational Education Amendments of 1968 provided substantial funding for the construction of area vocational centers, and the need for principals and superintendents with administrative knowledge, work experience in a technical field, and teaching experience in vocational education became a stated requirement for those individuals with administrative oversight for vocational education programs (Edmunds, 1967). The number of university preparation programs for vocational administrators was likely at its highest point during the late 1960s. These programs continued to be offered by many universities until the mid 1980s.

However, in the past 10 years, states have moved away from requiring a specific administrative certification for CTE programs. Administrative certificates have become more inclusive, that is, less specialized and more generalized (Zirkle, 1998). In 1993 the National Policy Board for Educational Administration (NPBEA) identified a set of knowledge and skill domains all principals must possess. Further, the Interstate School Leaders Licensure Consortium (ISLLC) was established in 1994 under the guidance of the Council of Chief State School Officers (CCSSO). This group, a consortium of 32 education agencies and 13 education administrative associations, worked cooperatively to establish an education policy framework for school leadership (ISLLC,

1996). In 2002 the Educational Leadership Constituent Council (ELCC), in cooperation with the National Policy Board for Educational Administration (NPBEA), further refined the original ISLLC standards into a set of NCATE-approved standards for the preparation of educational leaders. Each of these iterations of the standards has focused on a set of administrative skills and knowledge germane to all administrators, regardless of the students, programs, or facilities they oversee. The latest ELCC/NPBEA standards include the previously mentioned six broad areas of administrative leadership identified by ISLLC (1996) and adds a seventh standard specifically focused on administrator preparation:

> Standard 7: through substantial, sustained, standards-based work in real settings, planned and guided cooperatively by the institution and school district personnel for graduate credit. (National Policy Board for Educational Administration, 2002, p. 2-18)

Probably as a direct result of this philosophical change to a more general and less specific administrative credentialing process, several states have phased out their CTE-specific credential. The once standard "vocational director" credential is slowly disappearing. Studied periodically over the past 4 decades, there is a consistent reduction in the number of states having a specific CTE credential. Table 1 illustrates these studies and their corresponding findings.

Table 1

Number of States with Specific Administrative Certificates/Licenses in
Vocational/Career & Technical Education

Author and Year	N
Edmunds, 1967	37
Bowers, 1979	34
Kraska, 1989	31
Zirkle, 1998	26
Zirkle, Parker, & McCaslin, 2004	20

An additional consequence of the de-emphasis of a specific CTE administrative credential has been a corresponding reduction in the number of CTE administrator preparation programs in colleges and universities. While much study has been directed at the noted decline of CTE teacher education programs (Bruening, et al., 2001; Gray & Walter, 2001; Lynch, 1997; Pucel & Flister, 1997), the reduction in CTE administrator preparation programs is perhaps more significant. In 1998, Zirkle found 67 programs across the country for CTE administrator preparation. In 2004 the number stands at 43, a 36% decline in just 6 years. This is much more precipitous than the 11% decline in the past decade in the number of CTE teacher education programs identified by Bruening, et al, (2001). Table 2 illustrates the colleges and universities known to offer a program in CTE administrator preparation.

Table 2

College/University Preparation Programs by State

Arkansas	Maine	Ohio
No approved programs - completed via a Department of Education mentoring program	University of Maine University of Southern Maine	Kent State University University of Toledo Wright State University
Connecticut Central Connecticut University	**Minnesota** No universities with approved programs	**Oklahoma** Oklahoma State University
Florida Florida Atlantic Florida International Florida State University University of Florida University of Central Florida University of South Florida	**Missouri** Central Missouri State University of Missouri-Columbia	**Pennsylvania** Indiana U of Pennsylvania Penn State University Temple University
Georgia Georgia Southern Georgia State University of Georgia Valdosta State University	**Nevada** University of Nevada-Las Vegas University of Nevada-Reno	**South Carolina** Clemson Winthrop University
Idaho Idaho State University University of Idaho	**New Hampshire** University of New Hampshire	**Vermont** No approved programs – completed via transcript review
Indiana Ball State University Indiana State University Purdue University	**North Carolina** North Carolina A&T North Carolina State	**Washington** Central Washington University
Kentucky Eastern Kentucky Murray State University University of Kentucky Western Kentucky	**North Dakota** North Dakota State University of North Dakota Valley City State University	**Wisconsin** University of Wisconsin-Stout

Secondary CTE Leadership
Development Programs

Perhaps as a partial result of disappearing credentialing requirements and programs for CTE administrative leadership, many states have recently begun developing their own CTE leadership development programs, although the development of programs specifically targeted at CTE administrative leadership is not a new idea (Finch, 1977). Over 60% of states responding to a survey by the National Association of State Directors of Career Technical Education Consortium (2003) reported that they offered a leadership development academy for their administrators. These programs generally have several characteristics in common. They are usually one year in duration, meeting once or twice a month. Participants in the program are generally nominated for the program, and the programs are usually sponsored by the specific state department of education, perhaps in cooperation with local school districts, with academic credit sometimes offered by a college or university. Several states have had CTE leadership programs for several years. Some of these leadership programs are located in the states of Idaho, Missouri, Oklahoma, and Ohio. While these leadership programs are needed, there has been little research into their effectiveness. To date, Moss, Leske, Jensrud, and Berkas (1994) have conducted the only nationally-based evaluation of these programs.

Postsecondary CTE Leadership
Development Programs

According to the American Association of Community Colleges (2003), there are over 100 master's programs with a focus on 2-year community and/or technical college leadership. There are also over 100 doctoral programs with the same focus. Additionally, approximately 40 non-degree programs with a focus on 2-year college leadership have been identified. Bragg (2002) identified several graduate programs,

including ones located at Oregon State University, the University of Illinois, and Mississippi State University.

While not focused specifically on leadership for career and technical education, 2-year technical and community colleges claim CTE as a significant curricular thrust. As with secondary CTE, a leadership shortage has been identified at the 2-year college level as well (Shults, 2001). Graduate programs in 2-year college leadership focus on several areas, including leadership development, diversity, instructional leadership, and workforce development (Bragg, 2002). These areas are not significantly different from secondary CTE leadership areas. Perhaps one difference between these graduate programs and secondary leadership graduate programs is the extensive use of cohort models for course and program delivery. Learning communities provide effective learning environments for a select group of students (Bragg, 2002, p. 50). This preparation model is not widely found in traditional secondary CTE leadership programs.

Recently, leadership for CTE has been impacted by many events, including pressures for accountability, funding challenges, certification/licensure changes, technological innovations – the list is endless. Regardless of level (secondary or postsecondary) or type of program (graduate study, cohort, and state department-developed), present leadership with vested interests in career and technical education has recognized the need for leadership development. Support is needed to ensure that leadership programs for CTE continue in order for programs, and ultimately society, to prosper.

Implications for Planning, Implementing and Evaluating Leadership Programs

CTE needs high-quality leaders who inspire commitment and engagement between a school or college and its administrators, teachers, students, parents, business/industry/labor, and policy makers. When a school

or college has these types of CTE leaders, high quality programs emerge. However, establishing these types of leaders is not an easy task. Doing so requires opportunities for leaders to receive intrinsic rewards (e.g., feelings of challenging and interesting work, creativity, satisfaction, acceptance, and value), opportunities for professional and personal growth (e.g., learning new information and skills—both formally and informally, advancement within the school or college, leadership opportunities), and extrinsic fulfillment (e.g., awards, titles, incentives, verbal statements of appreciation, and additional resources and support for CTE).

Increasing specialization is occurring throughout society. Whether one is seeking medical, legal, automotive, electrical, computer, or plumbing advice, individuals with specialized backgrounds possess more and more advanced levels of preparation and certification or licensure. This increasing specialization throughout the occupational areas cited above is also occurring in education through certification, licensure, The National Board for Professional Teaching Standards, and The American Board for Certification of Teacher Excellence.

Federal and state legislation needs to provide opportunities for individuals to develop their leadership potential. Funds should be made available for CTE graduate education, state leadership development programs, and local initiatives designed to prepare CTE leaders.

Establishing and operating high-quality CTE programs requires leaders with a specialized knowledge base. Federal and state laws are requiring higher levels of accountability for academic, as well as CTE program outcomes. In order to meet these requirements, leaders need a thorough understanding of how to develop more efficient and effective programs. Present and future administrators in CTE must be prepared to function in an environment where the integration of academic and career and technical education is a certainty. A shortage of career and technical education leaders may result in a lack of instructional leadership if the individuals

administering the program are unaware of the mission, vision, goals, and objectives of career and technical education.

Policy Recommendations for
Local, State, and National Levels

Schools or colleges who want to develop high quality CTE leaders must not only find ways to support their development, they must also find ways to keep them in their organization.

CTE also needs to develop a set of national standards for developing its leaders. The process followed by ISLLC could be used as a model for developing these standards. A national set of standards could also be used to facilitate reciprocity of leaders across state lines. A specialized course or two in the administration of career and technical education should be included for all individuals seeking leadership positions in high schools.

Current administrators should encourage other individuals, such as teachers, who exhibit leadership characteristics, to pursue training relative to leadership development. Federal and state funding to develop and strengthen leadership development programs should be made available to colleges and universities, states, and local education agencies. Established CTE leadership programs should be replicated in other states to fill the need for CTE leadership programs. The need for effective leadership will not disappear.

Career and technical education must develop relationships and collaborate with other educational disciplines. For too long, career and technical education has been seen as "alternative education," that is separate, and often, unequal. By developing these relationships, career and technical education can be assured of being part of any educational process that requires qualified, effective leadership (Zirkle & Cotton, 2001).

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CHAPTER FOUR

Imagining the Future of Career and Technical Education: Reflections for Career and Technical Education Leadership from National Leadership Institute Scholars

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There probably can never be enough good
leaders. But in periods of instability, in which
change in the environment makes the familiar
way of conducting the affairs of an organization
unsatisfactory or irrelevant, the need for good
leaders becomes especially critical. Vocational
education is now in such an unstable situation.
Changes in the nature of work, increasing public
demands upon the education system, and
changes in the ethnic cultural composition of the
student body are challenging vocational
education to justify its place in the education
enterprise. Vocational education must begin its
own transformation if it is to remain a viable
form of education in the new environment.
Now, as much as in any previous era, vocational
education needs effective leaders. (Moss, Finch,
& Johansen, 1991, p 7)

The above is a passionate call to action for vocational
educators in an attempt to alert the field to an impending
crisis. It was apparent in the early 1990s that vocational
education would not have the necessary individuals in the
leadership development pipeline to meet the need for leaders
in the field. The authors of this quoted based their statement

on the early work in vocational education leadership by Moss and Liang (1990), which pointed directly to the harsh reality that the field lacked an adequate number of leaders, there was no formal established leadership development structures, and the field was making no formal effort to remediate or resolve the problem. They argued for the need to establish a leadership development system for vocational education and lamented the fact that there were not enough effective leaders for vocational education and that a nationwide coherent and systematic process to identify and develop potential leaders was not being made.

Based on the work of Moss and others, the early 1990s saw the member schools of the University Council for Vocational Education (UCVE) acknowledge a lack of specific leadership development activities for vocational education. This lack of general leadership development programs, as opposed to school administrator preparation, quickly became a priority issue. Even though a recognized leadership training gap existed, there was not time to create national or state leadership development programs (Moss, Johansen, & Preskill, 1991). Based on these findings, the National Center on Research in Vocational Education (NCRVE) funded a number of initiatives to assist in the establishment of leadership development programs at universities across the country.

The 1990s were a time of tremendous change in the landscape of vocational education. Reeling from the 1983 report, *A Nation at Risk* and buoyed by the publications *The Neglected Majority*, *Workforce 2000*, *The Forgotten Half*, and *America's Choice: High Skills or Low Wages*, vocational education was poised to take advantage of what should have been a golden opportunity to establish itself as a primary player in workforce development and cement itself as a necessary component of public education. Along with opportunity there also existed a substantial threat. During this time other themes were emerging which had a long-term impact on vocational education. The notion of transferable courses and

credit for students so they could move through traditional vocational subjects into an associate degree program or beyond created the need to recast course offerings and instructors so that general education credit could be offered. Articulated programs from secondary to postsecondary became a necessity and again required vocational educators to work differently, this time between secondary and postsecondary programs. Because of the changing economic profile of the country a focus on developing broad skill sets rather then specific job skill sets became essential; organizations flattened out and jobs were not static but dynamic, requiring incumbents to move quickly from one set of skills to another. The 1990s also brought a focus on technology, and higher order thinking and the general changing demographic of the workforce all played a part in the radical reforming of what work and the economy required of those entering at the less than baccalaureate level. These issues, coupled with an established lack of leadership ready to address these and other emerging issues, certainly caused tremendous stress in the vocational education community.

From a historical perspective, much was done based on the initial work of Moss and others in establishing leadership development programs. Resources were provided, and many initiatives were started in an effort to create a pipeline of leaders for the decades ahead. The question is: Were they effective? In the years since Moss and others did the initial work in vocational education leadership much has changed in the field and society, yet some things have stayed the same. Vocational education is now career and technical education, and many of the issues faced by vocational education such as funding and program offerings are still the same. Leadership is still a critical issue. However, unknown to the scholars who were engaged in researching and writing about vocational education leadership in the 1990s and earlier, the new century would bring significant changes and issues which they in no way could have anticipated.

There is a growing concern that appropriate educational leadership for career and technical education programs may be approaching a critical shortage, a concern primarily driven by three factors. First, the number of teacher preparation programs has been steadily decreasing for over two decades. Second, nationally the definitions of what qualifications are needed to become an educational leader are not consistent and frequently suffer administrative certification /licensure changes. Third, across the country many individuals are deciding that positions in educational leadership are not desirable due to the long hours, high stress, and questionable rewards. All of these issues have fueled the concern over the future of leadership of career and technical programs (Wonacott, 2001, Zirkle & Cotton, 2001).

Eleven years later the field seems to have the same problem. Zirkle and Cotton (2001) asked very pointedly, "Where will future leadership come from?" (p.1) Based on societal changes and the ever-changing political landscape, coupled with the changing themes listed above; career and technical education is at a point unseen at any time in the long and distinguished history of the field. Attempting to answer the question posed by Zirkle and Cotton will require in-depth examination of the role of CTE in the educational landscape.

The traditional path to leadership in secondary education is to move from being initially a classroom teacher, subscribe to a set of preparatory courses, obtain administrative credentials, then subsequently seek a leadership role as a principal or superintendent. Development of leaders at the postsecondary level is similar, however often not as prescribed in the secondary system. It is difficult to imagine a new generation of leaders emerging from the traditional path. Teacher preparation programs nationally have dwindled (Lynch, 1996, 1997; Zirkle & Cotton, 2001) This fact alone suggests that CTE is at a crisis point regarding emerging leadership. Zirkle and Cotton (2001) suggested that states must create their own leadership development programs such

as those currently in place in Ohio, Oklahoma, and Idaho. Kister (2001), in her work on state-level career and technical education leadership, noted that there is not a systematic effort to develop leaders. She affirmed the notion that degree programs and other educational endeavors do not provide a coordinated path for preparing educational leaders. Career and technical education leadership is facing an uncertain future and significant challenge.

Definition of leadership

Is there a common and widely accepted definition of leadership? Hundreds of books exist on the subject, trying to establish some understanding of the nature of leadership and define traits found in leaders. Is leadership a skill? Can it be taught? Learned? Are there specific attributes or traits which can serve as indicators or predictors which could lead to a definition of leadership? Academics, practitioners, and consultants, as well as individuals working at all levels of organizations, have wrestled with leadership and how to best teach/instruct/develop leaders. It is arguable that the concept cannot even be completely defined and certainly not for the lack of trying. Thirty years ago, Stogdill (1974) suggested there was no integrated understanding of leadership, even with an "endless accumulation of empirical data." (p.vii). Howard and Scheffear (1995) stated that leadership, like a host of other words – education, creativity, discovery, teaching – refers both to certain tasks or activities, on the one hand, and to certain achievements or outcomes on the other, which is to say, leadership is both a "process" and a "product" (p. 105).

Unquestionably, leadership by its nature is a difficult concept/construct to define. Warren Bennis and Burt Nanus (1985) identified over 350 definitions. In the years since their work was published others have emerged. A search on any publication database for journals, books, and other writing on leadership will yield thousands of works, most using a unique definition of leadership. Dictionaries disagree on a single

definition or explanation of the term. It is somewhat disturbing to realize that the study of leadership in organizations goes back to a time prior to the early industrial age. It is certainly unique that a field so well studied and with some much written about it has not established an accepted definition or scope of practice.

Can Leadership be Taught or Learned?

Many writers would agree that leadership can be taught – that is, if it is studied and defined properly. Leadership can be taught as a process, but it is more than just a process – it is a practice. No program can teach leadership absolutes and expect a common set of outcomes from a particular effort. Much as a physician graduates from medical school and begins a practice with what was taught, leadership can be thought of in the same light, that is, skills can be taught, learned, and practiced. Can it be learned? Certainly, history is replete with examples of individuals without any formal leadership training or exposure to the traits and skills found in leaders emerging as successful leaders in a broad array of fields. Gardner (1996) examined those leaders who emerged due to their intellect or skill or luck – some welcomed the leadership challenge other resented it – either way they were leaders and learned or developed the skills necessary to lead, move and motivate individuals. Howard and Scheffear (1995) argued that leadership cannot be taught. Howard postulate is supported by his belief that leadership is the result of individuals finding their own "voice" through an exposure to or an experience in a program of instruction. He used a metaphor of a musician to demonstrate his point. A musician can learn the instrument, the scales, the technical properties of music, and performance. However, not everyone with the same level of learning can perform at an equal level. Leadership theory and practices can be delivered through training or taught procedurally as a list of findings, practices or "to do's." Howard suggested that to truly lead, one must have a command of the skills taught and must learn interpretive reflection. Just as two musicians can know the

same amount about music, this knowledge does not make them both virtuosos. One will find his or her own way of doing things. What is taken in as instruction goes beyond the teacher and is interpreted by the individual to fit and is contoured to fit the situation. The argument is not just an exercise in semantics. Leadership can be taught, or at least an exposure to traits of leadership can be provided, but to be expert at leadership it must be learned through practice and developed through insights into various and unique situations and through relationships with both individuals and groups.

Leadership Development Efforts in Career and Technical Education (Vocational Education)

The 1990s saw a significant amount of scholarship and energy devoted to establishing leaders in vocational education. The National Center for Research in Vocational Education (NCRVE) was charged by the U. S. Department of Education to provide leadership development opportunities and services to vocational educators in the field. From this mandate and a partnership with the University Council for Vocational Education (UCVE) leadership development activities were placed high as a priority in research and practice.

Based on the work of Moss and Liang (1990) the National Center on Vocational Education began a program of supporting, through research and resources, the development of leadership development programs for vocational education. Based on the conceptual work of Moss and Liang, 35 leadership attributes for vocational educators were established. Further research on the 35 attributes by Finch, Gregson, and Faulkner (1991) confirmed the evidence, both qualitative and quantitative, and pointed to 37 specific leadership attributes.

The 37 leadership attributes assessed in the LAI are as follows:

- Energetic with stamina
- Insightful
- Adaptable, open to change
- Visionary
- Tolerant of ambiguity and complexity
- Achievement oriented
- Accountable
- Initiating
- Confident, accepting of self
- Willing to accept responsibility
- Persistent
- Enthusiastic, optimistic
- Tolerant of frustration
- Dependable, reliable
- Courageous, risk taker
- Even disposition
- Committed to the common good
- Personal integrity

- Ethical
- Sensitivity, respect
- Intelligent with practical judgment
- Motivation others
- Communication (oral, listening, written)
- Networking
- Planning
- Delegating
- Appropriate use of leadership styles
- Ideological beliefs important to the group
- Organizing
- Team-building
- Coaching
- Conflict management
- Time management
- Stress management
- Decision making
- Problem solving
- Information management

To date, the above list is the most comprehensive examination of leadership traits uniquely associated with CTE (vocational education) leaders. It is hard to argue with as extensive and all-inclusive list of traits and it is intuitive to think that someone possessing these traits would be a good leader. From this list the Leadership Attributes Inventory (Moss et. al, 1991) was developed and established as a tool to be used nationally in leadership development programs for CTE. Additional tools were created to assist in supporting a comprehensive leadership development program. Finch (1993) created, with NCRVE support, the Breakers leadership simulation. The interactive simulation allowed participants to explore roles in a typical community college leadership structure. Roles and expectations were outlined and defined for participants. The simulation was based on a typical community/technical college structure and used the Leadership Attributes Inventory as a foundation component of the overall simulation experience. Finch (1993) also let efforts to develop additional resources for leadership development and case studies appropriate for a extensive and far-reaching leadership development experience. The overall effort to create a comprehensive leadership development program for vocational education was remarkable. The development of an instrument, instructional curriculum, simulations, and case studies blended with the institutional support and subsidies for intensive instruction certainly created an excellent leadership development program. DuBrin (2001) examined leadership development and classified leadership education programs into four categories: feedback intensive, skill based, conceptual, and personal growth. Effective leadership development programs must incorporate all of these elements. The early efforts through the UCVE and faculty at institutions such as Virginia Tech and Minnesota undeniably created a balanced and comprehensive leadership development program.

In 1991 all 51 state directors of vocational education and almost 500 department chairs of programs with graduate programs in vocational education were offered the

opportunity to participate in UCVE-supported leadership development activities. It is unclear how many actually participated on a national scale. However, seven UCVE member institutions were provided significant subsidies to provide a new or extensively revised leadership development program for vocational education. A majority of these programs were short lived, and most ended prior to 1995 either through program loss or faculty and department reallocation. An evaluation of 17 programs which used at least one of the LAI attributes was completed by Moss, Leske, Jensrud and Berkas in 1994. Their work examined programs which used the early leadership development tools, instruments, and activities developed and supported buy the UCVE. They found considerable variance in the content and methods individual programs implemented. The data suggested the programs were generally well liked, and individuals gained significant knowledge regarding their perceptions of their leadership attributes. However, no long-term evaluation was designed or established. It would be another 10 years until a formal leadership development program was established for CTE.

The National Leadership Institute

In 2001 the Professional Development Academy of the National Dissemination Center for Career and Technical Education established the National Leadership Institute for career and technical education (NLI). Built on a purpose similar to that which propelled the work of Moss and others in the early 1990's it was designed recognizing that career and technical education is currently, and more importantly, will be in the future, operating in a leadership deficit. With a mission similar to that which drove earlier CTE leadership researchers, a new effort was initiated to establish a pipeline of leaders prepared to address the challenges that career and technical education will face in the new millennium. The focus of the institute was to develop individual leadership capabilities in selected secondary and postsecondary career and technical educators - identified as NLI Scholars –

through an intensive year-long program built around five comprehensive themes. Theme 1 was to develop individual leadership capacity. To meet this theme the institute was designed to assist the participants (scholars) in identifying their leadership style and leadership philosophy and to recognize their individual need for continuous professional development. Theme 2 was to understand policy development and legislative process related to CTE. Scholars studied policy and decision making at both local and national levels as well as worked on developing skills and strategies to influence policy. Theme 3 was to understand culture and individual program/state contexts. Sessions on diversity, globalization, and national demographics allowed the scholars to discuss and debate issues related to theme 3 and reflect on the diversity and uniqueness of each location, state, and program in the nation. Theme 4 delineated a vision and mission for CTE. Scholars wrestled with issues such as integration of academics, workforce development, and accountability as they crafted a mission and vision statement to guide their future leadership efforts. Theme 5 was to lead change and establish a reform initiative. Scholars examined change as a process, scrutinized educational reform efforts, and generated new models of CTE which would fit into both the current educational environment and the future.

The NLI program was delivered through six professional development initiatives and methods; the institute methods included :

- Individual leadership plan

- National face-to-face meetings

- E-meetings delivered through distance technology (12 per year)

- Mentorship

- Internship

- Interactive discussion of current CTE research and ideas

Specific outcomes for the participants in the institute were as follows:

- Develop and understanding of the role of a leader and how to exercise the responsibilities inherent in that role.

- Improve their understanding of and ability to lead reform and change processes.

- Develop and improve ability to influence policymaking at the local, state, and national levels.

- Develop skills in interpreting and using research findings and evaluation information to improve programs and develop new initiatives.

- Increase knowledge of legislative process and learn how to impact that process.

- Develop an understanding regarding the political and financial challenges of planning and implementing programs.

Recognizing the need to attract high-quality candidates, extensive marketing of the NLI occurred through national meetings, direct contact with potential scholars, and through state directors of CTE. Identified scholars were reviewed and subsequently selected by the Professional Development Academy Advisory Committee. Criteria for selection into the NLI were the following: leadership potential, service to the profession and community, creativity, academic performance, vision, teamwork skills, and other noteworthy accomplishments.

The first cohort of 33 scholars represented 11 states and was selected from a pool of national applicants who represented secondary, postsecondary as well as state and local area administration positions in CTE. The second cohort of 25 selected scholars represented 13 states and again was representative of a broad cross section of instructional and administrative positions in CTE. While membership in

the NLI was not limited to only those currently in leadership positions, certainly some were, as evidenced by the number of state and institutional program administrators. Scholars represented positions in CTE ranging from classroom teachers to ancillary service providers. A passion for CTE and deep commitment to the future of the field was the common thread which tied all scholars together.

Voices from the field

The balance of this chapter will provide the reader with a picture of the challenges and future of career and technical education leadership as seen by National Leadership Institute participants. The voices will be those of the participants who chose to respond to queries by the author and contributed thoughts and ideas. It is not the purpose of this chapter to evaluate the National Leadership Institute or discuss the activities which comprised the educational and professional development structure of the institute. Rather the NLI served as a vehicle from which individuals who were identified as future CTE leaders formed and re-formed ideas and thoughts regarding the future of CTE and what leadership traits will be most important and necessary for the future leaders in the field.

It is important to note that the author of this chapter was a member of the first leadership institute cohort; as such, the lens through which the data were examined and reported is sharpened by an personal understanding of the types of activities and discussions NLI members encountered. It is also important to note that the data reported were gathered from peers who knew of the author's membership in the first cohort and thus may reflect common understandings of leadership and the issues addressed through the NLI and the challenges that CTE leaders will face. Every effort has been made to honor the voices of the participants and report unbiased findings free of personal views and opinions. Due to practical considerations no other further data were gathered on the scholar responses, and triangulation was not

possible nor attempted through other means. Therefore, the scholar statements are trustworthy only as far as the reader can accept the fact that the author was part of the NLI and experienced the struggles scholars faced, the fact that the author has honestly examined personal bias and attempted to address potential bias through a complete discussion of possible subjective impacts and considerations, and the fact the author used ranking to eliminate issues of selection and engaged in an active process of interpretation to discover the truth. By reporting the thoughts and reflections of those who participated in the NLI and wrestled with the notions of leadership within the context of CTE in the new millennium, this chapter will be a call to action for those in current CTE leadership positions and for those aspiring to join other CTE leaders in prescribing the future of CTE.

First and 2nd-year scholars were contacted and asked to participate in brief study which would attempt to ascertain their views and beliefs on leadership in CTE. The study would consist of two waves of questions, similar to a Delphi study but not following a formal Delphi process. The initial query for participation was answered by 31 of the 58 scholars. A Web-based form was created and the URL sent to those wishing to participate. Initially the scholars were asked to respond to three questions regarding leadership in CTE which would be followed up with a numeric ranking of the responses. The first question was "Currently, what are the most pressing issues regarding leadership in CTE?" The second questions asked, "Looking into the future (5-10 years) what do you anticipate being the most pressing issues facing CTE leadership?" The final primary question was "Based on your understanding of leadership and your experience in the NLI, what are the key attributes/skills/knowledge/attitudes needed by CTE leaders in the future?" A fourth follow-up question was asked which was, "If you were asked to write a scenario of the future of CTE leadership what components would you include to insure a successful future?"

Of the 31 scholars accepting to participate, 28 completed the questions and submitted ideas and thoughts which were used to build a second questionnaire asking participants to rank the submitted ideas and thoughts. The second questionnaire requested that the scholars consider the strength of impact or importance of the statements gathered in the first round. A 5-point rating scale was used ranging from *no impact/importance* (value of 1) to *significant impact/importance* (value of 5). Calculated rankings were used to determine which concepts were perceived as having the most impact or were most important to the scholars.

The following are the scholars' responses, assembled and ordered by the strength of their ranking. Respondents are not identified, nor are specific responses attributed to an individual scholar; rather, the statements will reflect only the level of position held by the scholar. This information should be enough to clarify the context in which the scholars' thoughts and ideas are formed. With such a small number of individuals within the NLI community, identification of individuals would be possible with additional individual information. The voices in the responses show passion and a deep commitment to the field of CTE and a certain and pointed concern for the future of the field.

What are the Most Pressing Issues Regarding Leadership in CTE?

Of the responses to the query of "What are the most pressing issues regarding leadership in CTE" a single response overwhelmingly was ranked highest. The statement "lack of an articulated clear national vision for CTE" ranked above all other responses overall by being ranked as having either a high or significant impact by all respondents. Second highest was "lack of emerging qualified individuals to take leadership roles." These two responses outpaced all others in importance and generated passionate statements establishing them as primary issues facing CTE. The following will bring

the scholars' voices to both issues and share insights into how important these issues are to the field.

Scholars' Voices

Scholars who reflected on the lack of a clear national vision passionately described the challenge of establishing and communicating a vision across a national landscape which changes with state lines and federal policy. A postsecondary level scholar describes the challenges as overwhelming and difficult to even comprehend.

> A vision for CTE which would work across the nation would be tough and needed. My state is very supportive of CTE but I know others are not; I am lucky. We need something to bring us together. I certainly don't have the answers and don't know if we can even understand the question, but how can we have a clear vision when we run to adapt to the latest in federal law and policy even if we don't like what they are. We need a vision but I don't know how it could come about with such a wide range of subjects in CTE and so many different states.

A secondary-level scholar argues that vision is important for the future and the present and looks to the national association as an agency which perhaps should create and communicate a vision for career and technical education:

> Vision - I would have to say lack of a national vision is the primary reason CTE is not thriving. Not just a vision for the future but a vision for right now. If we are talking about ACTE [Association for Career and Technical Education] how can they expect one person elected to lead the association for a year and establish a vision?

Leaders tell stories and use those stories to create a vision and a path for individual and groups to follow. Stories create culture and can reflect and reinforce important milestones in the organization. Gardner (1996) aptly described the role of story stories as the key to leadership "perhaps the key to leadership, as well as to the garnering of a following, is the effective communication of a story" (p.64). One scholar representing secondary education related the following:

> Lack of a story – we [CTE] don't have a national identity. Nothing to hang our hat on - ag ed [agricultural education], bus ed [business education], etc., all have their stories and cultures. Some of their stories and cultures go back before we even defined vocational education. We don't have a common culture and we have been in competition for students for years. How can a leader from a specific area of vocational education [CTE] lead those in the other service areas - and vise versa? . . . They only understand their own story and not those of the other areas. There needs to be a vision articulated in a story which all program areas can rally around. Without this [vision] I don't think we can continue to exist as one body, representing many different fields of study.

CTE does have a rich history, even a storied history written about since the time of Prosser and Dewey. However, if there is one constant it is change, and the world has changed. Many educational programs have been established and subsequently retired or failed. In writing about the need for a vision, two scholars noted the importance of a person to establish the vision. Both reflected the need for change and finding a person who can establish a vision for change:

> I am not sure if CTE has the structure to move ahead in the next few years. It seems we don't

have a vision for what the future could be or a
person who can establish a vision. We are
holding too tightly to the past, perhaps due to
the fact there are very few young leaders in CTE.
Most of the current leadership is aging and not
interested in radical change - that is what we
need - vision for a radical change. I am afraid we
[CTE] will be added into the list of educational
efforts that failed if we don't find a vision we
can all buy into.

Another state-level scholar further elaborated on the
fact that new leadership will be facing tough issues and a
troubled future:

The most pressing issue appears to be a lack of
clear national direction on the future of career
and technical education. Since there is much
uncertainty, especially due to pending
legislature legislation, it is hard to define a clear
vision and mission that is embraced by current
leadership. This certainly presents problems
when trying to develop new leadership.

A state-level CTE scholar again stated the importance of
a vision for the future but tempered the argument by noting
reflecting on the fact that to live in the past is to fail in the
future:

CTE's leadership needs to be developing a
vision of what CTE can be in the future, not
defending what CTE has been. CTE has a
strong history and we are proud of it; however,
we cannot live in the past, as that is a failure-
ridden approach to the future.

There is agreement among the scholars that vision or
lack of vision is a critical issue in order for CTE to move into
the future.   The second most frequent mentioned critical

issue was related to the fact that CTE is sorely lacking in leaders able to enter and provide the vision necessary for the future. Scholars consistently articulated the fact that there are limited leaders emerging in the field of CTE. Even with the early work of the UCVE and Moss et al., in the 1990s, little impact is currently seen from those efforts. More recently the NLI could have a only a small impact on what is a huge leadership gap. Training, empowering, and liberating 58 individuals may not be enough to solve the leadership crisis which is well established.

A postsecondary scholar is very succinct in capturing the essence of the problem:

> In regards to leadership, career and technical education will experience a large turnover of leadership in the next 10 years. We must continue to prepare leaders in our profession.

Reflecting more on the causes, issues, and challenge related to the lack of entering leaders, a state-level scholar reported:

> The leaders that I see coming into CTE have limited background in CTE and don't always see CTE in its full light. In some ways, it seems to be treated as just one more funding stream and one more thing on an already crowded list of "to-do items" for a general education specialist at either the secondary or postsecondary level.

A postsecondary scholar reflected on a more personal level the frustrations seen over a number of years regarding CTE leadership and the fact that there are not enough leaders to support the programs which exist:

> I've been involved with career and technical education at a postsecondary level for almost

14 years. . . . since then, there hasn't been a
great influx of new leadership in career and
technical education. Most of the career and
technical education people in key positions
have been there a long time. These people are
starting to retire, and I don't see many
qualified people ready to replace them. I feel
that career and technical education has not
been valued as highly as educational
opportunities offered through 4-year
institutions. This is a key issue regarding
leadership in CTE. If it's not perceived as
being valuable there is a reluctance to support
it.

Demographic data mentioned at the 2003 ACTE
National Convention reflected the concern that the average
age of the membership is over 50 years old. The future
success of any field depends on maintaining an injection of
youth, not just for the number of working years available but
for the diversity of ideas and thinking. Even though it sounds
like CTE leadership is facing unprecedented challenges,
scholars are upbeat about the successes of the students, and
perhaps those are the people who are key to the new vision
of CTE. A postsecondary scholar passionately reports:

There are very few programs left in the nation
which can turn out CTE leaders. Looking at
my peers in the institute, the average age here
has to be over 45 or 50. Where is the youth in
our cause?   Teacher ed programs are being
cut and graduate CTE programs are difficult
to find. What once was a proud and strong
field of professional study is now only
represented in a few schools. I don't have the
answer to the leadership question, but I do
know we are still turning out highly skilled
workers who are the very fabric and backbone
of our working society. I am encouraged at

the quality of student emerging from CTE
programs. We have done good work in
preparing not only technicians but, more
broadly, thinkers and learners. Perhaps our
next generation of leaders won't come from 4
year programs but from the field. These folks
in the field know the real world and won't
stand for anything less than excellence in the
job.

Another state-level scholar looked at the broad picture
painted by the lack of CTE leadership programs:

An increasing number of people with little or
no career-technical education background or
experience are leading key offices, programs,
and school districts. This hinders vision,
commitment, and produces poor decision-
making on planning, programming, human
resource management, fiscal management,
assessment, and evaluation.

With the reduction of programs preparing CTE leaders
and teachers it is clear the field is in a situation nearing a
crisis. Both the fact that we have few emerging leaders
through formal programs and a lack of vision for CTE
suggests there needs to be a new youthful movement for the
field to survive. Perhaps the answer lies in those students we
turn out into the field. As skilled practitioners of CTE subject
areas they are key to establishing vision through their work
on CTE advisory committees. These advisory committees are
key to the development of programs in CTE. Advisory
committee members offer ideas on the future of the field.
These members are critical for programs which want to
continue to effectively and efficiently serve their regions.
Advisory committee members as leaders in the field and
community members could influence, through advocacy of
CTE, structures and non-supportive administrators. It is
certain that CTE needs to further examine current realities

and find a new solution to the issues brought forth by the scholars. Leadership training may be the answer or it may be one part of the answer to the current issues.

Looking into the Future: What do you Anticipate being the Most Pressing Issues for CTE Leadership?

Looking at the present state of affairs in CTE and comparing it to the future creates no new surprises. The same issues identified as important and critical in the current environment are articulated as critical for the future. Both vision and number of leaders in the field were common themes emerging from this question. Perhaps this fact suggests a situation in or near chaos, a situation where one cannot look past the immediate situation to see a vision of the future. Wheatley (1999) described chaos as the point where a system plunges into random behavior where no order exists (p.117).

Scholars' Voices

Not seeing any difference between the issues articulated by the scholars' experiences with current realities and future ideas is reason for concern. It appears, from a postsecondary scholar, that we could be approaching chaos in CTE:

> I can't look to the future except through what is happening today. We have to solve so many problems with leadership in CTE now before we can even think about the future. It doesn't seem too important to other educational leaders that CTE is close to a leadership crisis. I think they [other educational leaders] are fine if we just disappear.

CTE may have tried to survive by being all to many and not adhere to the principles and vision which created the field. The notion of a program versus a system is important.

It is a simple fact that programs are easily removed, eliminated, or redesigned. Systems are not, since systems are structures which interact with and support many programs. A state-level CTE leader suggested a lack of vision has allowed CTE to be redefined into something not definable as a system to prepare students:

> I also believe that if CTE can't focus its message
> and mission, it may be lost. CTE at this point is
> so many things to so many people that it is
> losing its clarity. Many outside CTE have tried to
> use CTE as the answer to many ills. It is seen as
> a program versus a system.

A secondary scholar found the future must be structured around an individual who has the knowledge and skills necessary to be an apologist for the field:

> [A CTE leader must] continue to define and
> defend our purpose, providing the data that
> indicate we are a vital part of education and
> technical training and economic development.
> We need leadership with the background to
> know what we do, the credibility to foster
> change, and the vision to lead.

The very premise of the NLI was to establish a program to prepare individuals from CTE fields to enter leadership positions in the future. Most NLI participants were already leaders in the field and were successful in creating programs or schools, some of which are national models or exemplars. Creating leaders for the future is not easy and the demographics paint an up-hill battle. If we are not preparing CTE leaders for the number of positions available then it is logical that other educational systems will place individuals in those positions regardless of their professional skill training or area of study. One school of thought is reflected by a postsecondary scholar who has a concern regarding the value of a deep understanding of the historical aspects of CTE. The

scholar further reflected on the notion and the value of having individuals who understand the historical roots of CTE in leadership positions:

> I anticipate [concerning leaders in the future] a
> lack of historical roots. More and more, the
> leadership for CTE is coming from a non-CTE
> background. We must "develop our own" in
> order to continue our strength.

If we are to continue to place only CTE-prepared individuals in the open leadership positions we will never meet the needs regionally or nationally. Perhaps a different perspective is required and a different way to conceptualize the problem. A postsecondary scholar looks at the future and has a slightly different take on the situation. Based on this scholar's ideas the notion of educating individuals to take leadership positions from outside the field is needed. Further suggested is the concept of assisting those individuals not prepared through formal or traditional CTE programs to become leaders.

> CTE must be about supporting futuristic leaders
> who can contribute to CTE's solidification and
> growth. We tend not to recognize those who are
> out of our "field" and are "not one of us". CTE
> is fast becoming the poster child and symbol of
> educational myopia.

If in fact CTE is not preparing enough leaders to continue to staff all the positions available perhaps the answer might come through recognition of those with other foundational skills sets and grow within them an appreciation of CTE. The suggestion would be to make them champions of CTE through education and development. There is no clear answer to the leadership crisis in CTE, but perhaps there is a new way to look at the situation and direct our efforts at the education of those who find themselves leading CTE.

What are the Key Skills and Attributes
Needed by CTE Leaders in the Future?

Vision is mentioned in the literature as an important attribute for organizations and should be established by the organizations leaders. Kouzes and Posner (2002) argued for leaders to inspire a shared vision for the organization to be successful. Maxwell (1999) listed vision as one of the 21 indispensable qualities of a leader. It is hard to imagine a successful leader who has no vision for the future of the organization. Vision, as has been established above through the voices of the scholars, is a critical skill for those leaders in CTE. Vision was most frequently mentioned as both an attribute and skill necessary for leaders in the future. The following are the attributes, in order of importance as determined by mention which, NLI scholars stated as important for leaders in the future.

- Vision

- Commitment to the principles of CTE

- Ethical

- Ability to change

These four attributes, except for commitment to the principles of CTE, are part of the LAI and reflected in the list of attributes composed by Moss et al.

Scholars' Voices

Vision is the common thread which ties all the scholars' reflections together. A postsecondary scholar noted:

The future leadership of CTE must have the ability to articulate a grand vision of what CTE can be.

A simple statement but powerful; the vision must be of what CTE can be. Again, vision was mentioned by a secondary scholar as the most critical attribute of the new generation of leaders necessary to bring CTE into the future:

> We cannot go into the future without a clear
> vision of what we want to be and where we are
> going. This is the most important thing
> [attribute] a leader of the future must have. With
> no vision then we will just flame out and die.

The suggestion that CTE may die is disturbing to most. However, the essence of this statement is again a call to immediate action for CTE at all levels and suggests that we need individual leaders skilled to move the field into the future.

In these trying times, with ethical dilemmas facing corporations and organizations consistently in the news, it is not surprising that scholars reflected on leaders being ethical. A postsecondary scholar reflected on the current business climate and discussed ethics in leadership:

> We have seen many leaders who you wonder
> who they are listening to. There seems to be no
> ethical base for organizations. I cannot stress
> enough how important ethics are in leadership.
> A person not seen as ethical will be dismissed as
> a leader and not effective.

Further, this scholar reflected a personal situation regarding ethical leadership in an educational organization and how quickly a leader's effectiveness is lost and not regained due to a lack of ethical behaviors. The scholar summarized the situation in this manner:

> If [the leader] would have just been honest and
> ethical he would still have the respect of all of
> the employees. This one situation ruined him.

As an attribute, commitment to the principles of CTE, may have not been deemed measurable by the LAI as the design of the instrument and programs were specifically targeted to individuals practicing in the field of CTE. The emergence of the attribute "commitment to the principles of CTE" from the NLI scholars perhaps reflects the changing nature of CTE in the 21st century. It might be a common understanding now that not all leaders in CTE will have the commitment necessary to move CTE into the future. As some scholars mentioned, not all leaders in CTE are trained or educated through CTE programs. They find themselves in CTE because of either a lack of individuals prepared to take CTE leadership roles or a reluctance of prepared individuals to take the leadership roles. A postsecondary scholar suggested some well-prepared leaders simply do not want the job:

> To be a leader [in CTE] is difficult. I know past students who could do the job but don't want the problems. The position requires tremendous hours, and the demands are so different today. You have to be all to everyone - you need to be able to work with general education, interact with the workforce, interpret federal legislation, fight for funds, recruit students, manage physical plants and facilities. It is not surprising to me many don't want these headaches. I see the new leaders in CTE having to fight for everything. And to do it with fewer and fewer resources. It is ridiculous - I wouldn't want the position.

It is true, the nature of leadership positions are changing, and in the current economy we are being asked to do more with less or at least the same amount. One scholar reflected on this situation and termed the current situation institutional insanity:

> They [the education system] keep expecting
> different results by doing the same things. This
> is the a clinical definition of insanity, which can
> be applied to the states and feds who insist on
> having the local districts do more with the same
> or less.

Change is the only constant in society today. Never have we faced such a changing educational landscape. From the federal level to the local level change is being driven by federal, state, and local legislation as well as by business and global economic competition. The organization which changes to meet the advancing needs of society will succeed and prevail, while those which cannot adapt readily to the changing complexities of the new educational world order. The attribute of ability to change is necessary as growth comes through change.

The second part of the question asked for skills necessary for CTE leaders in the future. Again, the top skills were reflections of those identified early by Moss, Johansen & Preskill (1991). The top four skills necessary for CTE leaders in order of mention were are:

- Networking skill
- Organizational skill
- Team building skill
- Decision making skill

Networking skill, as the most mentioned skill, speaks to the need for leaders to be broad in how they relate to other educational areas and legislative bodies. A state-level scholar reflected on this skill as being critical in successful work in the climate of CTE today and for tomorrow:

> The leader of tomorrow has to be able to work
> with many publics and be able to make the case

for CTE. Everyone looks at the money CTE has
and wants some of it. We are in a resource-
demanding time. For the leader to be effective
he or she must be able to create partnerships of
not only practice but of thinking that CTE is
important and needs to continue - the money is
there to support what we do. We must create an
understanding of why we need to work together.

Networking skills will be imperative, as will collaborative
skills that enable career technical leaders to extend their
resources and programs to meet the growing demands of the
workforce. Another scholar reflected on the necessity of
working across both education and society equally:

Leaders will have to be able to seek out and
attract those within CTE, within education, and
those outside of the disciplines of education that
are able to sit at an interdisciplinary table and
contribute, significantly and equally, to the
conversation of CTE's future.

Yet another reflected on the nature of new partnerships:

Leaders will need to be skilled at building and
cultivating partnerships because of the
interrelationships of business, industry, labor,
and education working on the common issues of
preparing individuals to be competitive in our
global labor market. Most importantly, future
leaders need to be politically astute and need to
know how to navigate the political climate.

Future leaders will have to work with many publics, as
reflected above. These leaders will also be required to design
an organizational structure which meets the new demands for
accountability and assessment. Another postsecondary
scholar noted that the changing times with regard to
accountability is affecting everyone related with CTE:

It is a new world; the leader of tomorrow needs
to have the stuff [skills] to understand how to
organize the system to gather the data we need
to make our case. We must show where we fit in
the big picture and be able to be seen as worth
the money. Everyone needs to understand and
be able to do this no matter what level you work.

Supporting this scholars' notion are two additional
scholars who wrote supporting the last two skills areas
necessary for CTE leaders. A secondary scholar reflected on
team building:

We are being asked to work with many groups
anymore. We are asked to articulate, integrate,
and still teach. I think the most important skill is
being able to create teams to do this. We need to
be a big team to make this work.

A postsecondary scholar supports the skill of decision
making for leaders in CTE:

One of the most critical components is
understanding information and making
decisions. To make good decisions you have to
know how to interpret and use the information
you get. Good leaders can make good decisions.

The future leaders of CTE will need to be
knowledgeable of not just our culture and our society but of
the role CTE has in a myriad of global education and
workforce systems. Not to understand our new role will lead
to the same vision and identity problems we are experiencing
on a national level only at a global level. Again we would be
trying to solve the unresolved issues of identity, function, and
role using hindsight.

One of the key attributes in the next generation of
leaders would be a critical understanding of the philosophy

and value of career and technical education and a willingness to defend these to legislators, administrators, students, parents, business representatives, and social service organizations.

Career and technical education is currently struggling. Leadership, or lack of leadership, is not the only issue, but is certainly an important factor which needs consideration and examination. We need leaders who can establish, or in some cases, reestablish CTE as a necessary component of an overall educational system. CTE can no longer be seen as "alternative education" (Zirkle & Cotton, 2001). The educational future of our country must embrace and include CTE if we are to continue our economic viability and development as a global leader. Vision, through effective leadership, is necessary.

Summary

Career and technical education is rich with a long history of assisting students to become productive members of society. However, what we can learn from history is also that we will be faced with an ever-increasing rate of change. As has been discussed above, CTE is at a crisis point, not just due to the fact we have an aging population of administrator/leaders and few leadership development programs creating new and emerging leaders, but primarily due to radical and persistent change in the educational landscape. A number of scholars in their responses suggested that CTE is moving toward a state of chaos. Perhaps we should follow the advice of Wheatley (1999) who described a new science of organizations and of leadership. The new science is a movement away from the traditional Newtonian idea of structure and order to a quantum notion of chaos and disorder, but from this chaos can come a new structure developed and created by a constant reexamination and reordering. The basic notion of the new science is to look holistically at the system and at the relationships which exist between the parts, not focus solely on the parts themselves.

Wheatley argued that it is the very nature of life itself to self-organize into patterns. The patterns are there, but often we do not see them due to a rigid structure which does not allow for examination of potentials outside the prescribed structure. These patterns emerge only when you can look at the big picture of the systems in which the organization functions. Disorder or chaos can be a source of a new order, and growth will appear from disequilibrium, not balance (p. 21). If indeed CTE is facing an uncertain future and crisis then an opportunity for growth and change is available. From chaos comes order, and from this order comes the ability of systems to self-organize into new forms. These new forms look at times very different from what was understood in the past. CTE may be at this point with regard to the development of new leaders. Leaders need to be a part of, and have an important role in, the new chaotic world. These new science leaders need to operate differently and understand the fact that we are all part of a larger system, a system which is interconnected and requires constant adjustment. Wheatley (1999) states:

> In this chaotic world, we need leaders. But we don't need bosses. We need leaders to help us develop the clear identity that lights the dark moments of confusion. We need leaders to support us as we learn to live by our values. We need leaders to understand we are best controlled by concepts that invite our participation, not policies and procedures which curtail our contribution. (p. 131)

CTE can survive if we look at our system in the larger context of education. We have a unique niche which only we can fill. We need individuals who can become leaders in the new science and work from chaos and create a new vision of CTE. Wheatley (1999) argued for emergence of a "strange attractor." The strange attractor is the element around which the new system self-organizes. The question for CTE is: What is the strange attractor? What will be the new element

around which we will form our new structure and patterns of practice. The strange attractor will only appear once we are deep into the chaos of disorder. CTE is not at this point - yet.

Margaret Mead is often quoted as saying "never doubt a small group of thoughtful committed citizens can change the world. Indeed, it's the only thing that ever has." Her quote, which the author was unable to specifically find cited in the literature, certainly can be a statement for CTE and the participants in the NLI. The participants in the NLI are committed to strengthening CTE by becoming those leaders who are necessary to move the field into the future. It is possible to change the future of CTE; 58 leaders are ready to take the challenge. However, in the long term, it will take more than just 58 individuals. There needs to be a concerted effort at bringing the young into the field and mentoring them into the next generation of leaders. At this time it is unclear where these new leaders will come from. The 58 members of the NLI will hopefully have an immediate impact; however, a larger question remains; Who will take their place in a few years when these scholars retire? CTE cannot continue to exist on the margins. CTE cannot continue to embrace leadership development only when crisis is imminent. CTE needs to looks toward a new systematic and system-wide movement in developing the future of CTE and those leaders who are able to establish a dynamic and fluid vision, embraced and accepted by students, parents, community members, educational leaders, and legislators.

I would like to recognize the 58 members of the NLI for their energy and commitment to CTE and thank them for their assistance in completing this chapter.

2002 Scholars

Gloria Arevalo, Clay Mitchell, Kathryn F. Striebel, Angela S. Neal, Sandy Dunkel, Debora Almgren, David Burgos, Jamie Justice, Curt Lucas, David Dailey, Kay Ellingwood, Jodi Elness, Pradeep Kotamraju, Sara Laviolette,

Steve Mumma, Rebecca L. Niemi, Debra Rogne, Deborah A. Goodall, Virginia O'Brien Irwin, James Smith, Jr., Sharon G. Enright, Isaac Kershaw IV, Barbara L. Nicol, Julie Novel, Gayl M. Ray, Ralph Shibley, Raul Soto, Peggy L. Geib, John W. Howell, Douglas R. Major, Carol A. Kinzler, Cynthia Pellock

2003 Scholars

Cindy L. Beck, Dawn K. Holley, Jenniene Kauer, Dora Welker, Rebecca Woodhull, Karmey Olson, Karen Bothun, Alan Hall, Debra Tankersley, Kelley Rhoe-Collins, Diane Dingfelder, Melissa Fahning, Brenda Norman, Bruce J. Steuernagel, Kimberly Runion, Marie Barry, Joyce Boudreau, Kelly Herold, Susan Nell, Raymond R.Timlin, Roberta White, John Albright, Lindel Fields, Carla High, Carol J.Watson

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CHAPTER FIVE

Leadership in Career and Technical Education:
An International Perspective

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Career and technical education (commonly referred to in the international community as vocational education and training)[1] policy is undergoing substantial debate within international organizations, and the following organizations have come up with new policies or are in the process of doing so:

- The Inter-American Development Bank (IADB);

- The World Bank (Africa Human Resource Development Unit); and,

- The International Labour Organization/United Nations Educational Social and Cultural Organization.

In addition, other organizations have developed documents that cover education more broadly, providing a glimpse into the general role that vocational education and training will play, but not the specific goals and objectives of this sub-sector. While the United States Agency for International Development (USAID) has not developed a new policy governing investments in vocational education and training, current support for the "Global Workforce"

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[1] This paper uses the terms *career and technical education* and *vocational education and training* (VET) interchangeably. VET is commonly used in the international arena.

Initiative has led to innovative thinking about the role of the vocational education and training sector.[2] Australia's "Reframing the Future" initiative is important for its demonstrated commitment to education and training, particularly for the emphasis on the training needs of private firms.

Finally, regionally, within Europe, the Leonardo de Vinci initiative, with its focus and impact, shows the increasing importance attached to vocational education and training internationally. The perspective brought to de Vinci from the European Union has in recent years led to a similar focus on sectoral interventions, which looks remarkably similar to the narrower project documents produced by the international development agencies and national governments.

What these organizations say does matter for the provision of vocational education and training policy globally. While lending to international governments in this sub-sector has declined in the last 2 decades, governments in developing countries have frequently continued to push for grants or loans in this area. A review of recent loans made by the Asian Development Bank and the World Bank revealed a continuing emphasis on vocational education, particularly in Asia and some parts of Africa. In 1999, for instance, 11% of World Bank lending in education occurred in the area of vocational education and training.

Moreover, the increasing emphasis in national development strategies on policies that address nationwide human resource or workforce development strategies has led to a new emphasis on training in the workplace. The United States Agency for International Development has a new initiative called the "Global Workforce Initiative," which uses

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[2] The most recent policy statement USAID issued governing vocational education and training I was able to find dates from 1982. The last major review of vocational education and training by USAID was published in 1992 (Herschbach, Hays, & Evans, 1992).

business development and economic growth as a rationale for encouraging government investment in training.[3] The European Union's "de Vinci" program is more ambitious than the U.S. effort, but similarly relies on using VET to "developing competitiveness and entrepreneurship" (Rouhiainen & Valjus, n.d.) This emphasis on connecting vocational education and training to economic development more explicitly is at the heart of state and federal government activity in the developed as well as the developing world.

This debate is important to scholars of career and technical education for a variety of reasons. First and foremost, knowledge about career and technical education is frequently shared internationally, and lessons learned from the developing and developed worlds can inform the development of effective U.S. education systems. Secondly, many U.S. departments training career and technical education professionals have large cohorts of graduate students from the developing world. Finally, many career and technical education professionals work internationally, and some understanding of the complexity of the debate around career and technical education internationally will help scholars and researchers work together with professionals from developing countries more effectively.

This paper reviews the current policy papers from ILO/UNESCO, the World Bank, and the Inter-American Development Bank on career and technical education. First, however, the paper reviews the current state of career and technical education globally, describing patterns of enrollments, graduation rates, and financing, as well as the relationship with the general education sector. Thereafter, the paper reviews the role of development agencies, stressing the debate about their importance in national level development among scholars, and describing three areas of debate: a) Goals for vocational education and training, b) Privatization

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[3] The initiative has a new website up and running: http://www.gwit.us/overview.asp.

and the relationship with industry, and c) Curricular focus of vocational education and training. Within the context of these three policy issues the paper details the current positions development agencies are taking.

The State of Career and Technical Education Internationally: A Brief Overview

The policies from the World Bank, the IADB, and UNESCO/ILO are the first major push to craft clear global policies on vocational education and training in a decade. They follow on the heels of more aggressive action in the European Union and Australia, which each enacted significant policy reform in vocational education and training in the early 1990s. While the EU and the Australian government have taken important steps, the starting point for the developing world is the 1991 World Bank policy paper on vocational education and training and the larger monograph by Middleton, Ziderman and Adams (1993). Since that time we have had scattered debates on the international stage about the role of vocational education and training. Most recently, the World Bank produced a series of case studies (Gill, Fluitman, & Dar, 2000) highlighting the state of vocational education and training globally. The OECD produced a large set of case studies and, more broadly, a summary document on the school-to-work transition in the late 1990s. This document and the many case studies highlighted the particular problems facing youth in the labor market in each country (Organization for Economic Co-operation and Development, 1998).

Academic scholarship on international vocational education and training has continued in recent years, focusing on the trade-off to vocational and general education Bennell (1996), Hawley (2003a), vocational and technical education reform Wilson, 1996, 2001), and the continuing dilemma of an adequate supply of skilled workers. Scholars, and particularly those interested in the economic outcomes of education, have continued to document the varying returns to

vocational and academic schooling (Dearden, McIntosh, Myck, & Vignoles, 2000; Harmon, Oosterbeek, & Walker, 2000; Siphambe, 2000). In a recent article, Hawley (2003a) showed that the returns to vocational school fluctuate over time and by gender, forcing us to recognize that investments in educational credentials are dependent on the supply of potential workers and the curriculum alignment with the labor market. This contradicts the established orthodoxy to an extent, which has largely pushed primary and lower secondary schooling regardless of field of study (Psacharopoulos, 1987; The World Bank, 1995).

Recent texts edited by Herschbach & Campbell (2000) and Castro, Schaack and Tippelt (2000) offer important contributions to the literature. For instance, in an overview of educational planning in vocational and technical education, Herschbach & Davis (2000) provided a review of the techniques governments have used to carry out educational planning for vocational education and training, stressing the importance of integrating technical manpower planning with curriculum development. One highlight of both texts is the release of case studies of the vocational education and training systems in Europe, Asia, and Latin America. The case studies from Herschbach and Davis (2000), Gill et al., (2000) and Castro et al., (2000) provided significant details about the state of vocational education and training reform globally. In particular, the case studies on China provided an excellent description of the efforts the Chinese governments have made to refocus vocational training to emphasize firm-specific training rather than school-based programs (Fallon & Hunting, 2000). Moreover, the overview of the experience of the Nordic countries from by Lasonen and Rauhala (2000) provided an excellent overview of countries that have reconciled the long-term need for skilled labor with a broad social commitment to education. Wilson (1996) and Castro, Carnoy and Wolff (2000) reviewed the current state of affairs in Latin America, stressing the success of the SENAI training center model but raising questions about its future as the basis of skills development in Latin America.

One quick way of reviewing the level of commitment to vocational education and training internationally is to examine key indicators that offer us a sense of the types of changes that vocational education (in particular) are undergoing. The following section provides a snapshot of current vocational education internationally, reviewing enrollments, graduation rates, the relationship with the general education sector, and the current financing of vocational education and training. It is worth describing the global situation of vocational education and training as a way to better understand the suggestions development agencies have made as well as to outline some of the leadership problems facing vocational education and training directors.

Enrollments in Vocational and Technical Education

Table 1 lists by region of the world the number of students enrolled in secondary vocational and technical education in 1998, 2000, and 2001. Overall, we see increases in the numbers of students enrolled in vocational or technical education. Of the countries with at least 2 years of data, we see increases in 33 of them, while 19 countries experienced declines in enrollments. In other words, 64% of countries experienced increases in vocational or technical education enrollments. By region, the data reflect some additional trends. In five of the seven regions detailed in Table 1, more countries experienced increases in enrollments. The largest increases are in South America, Africa, and Oceania, although the size of the systems varies greatly. Within European countries, which continue to maintain large vocational and technical education enrollments, a majority of large systems (e.g., Italy, the United Kingdom, and Germany) experienced increases in enrollments.

Table 1

Enrollments in Career and Technical Education
for Selected Countries (1998-2001) by Region

	1998/1999	1999/2000	2000/2001	Percentage Change
Africa				
Algeria	62,725	85,442	84,537	34.8%
Angola	50,999	67,118	79,112	55.1%
Congo	...	...	20,327	NA
Egypt	...	...	2,420,734	NA
Libyan Arab Jamahiriya	...	...	245,165	NA
Mozambique	22,881	27,226	20,047	-12.4%
Rwanda	13,794	16,061	19,923	44.4%
Sierra Leone	...	24,179	21,454	-11.3%
South Africa	160,351	158,197	198,328	23.7%
Tunisia	...	88,761	78,942	-11.1%
United Republic of Tanzania	22,881	23,567	24,286	6.1%
North America				
Bahamas	19,017	19,017	...	0.0%
Canada	...	...	102,377	NA
Costa Rica	...	46,596	48,892	4.9%
Cuba	183,515	202,286	226,761	23.6%
Dominican Republic	35,484	36,352	36,948	4.1%
El Salvador	96,813	...	...	NA
Guatemala	134,986	132,090	144,758	7.2%
Jamaica	17,870	...	498	-97.2%
Mexico	1,238,452	1,367,199	1,413,243	14.1%
Nicaragua	15,481	17,324	17,856	15.3%
Panama	101,000	101,309	99,976	-1.0%
United States of America*	...	...	727,899	N.A.

(continued)

Note. Statistic are from Silverberg et. al (2004), Figure 2.2, page 25. This number represents the 26% of all high school graduates declaring as vocational concentrators. Data from other years are not available currently.

Table 1 (continued)

Enrollments in Career and Technical Education
for Selected Countries (1998-2001) by Region

	1998/1999	1999/2000	2000/2001	Percentage Change
South America				
Argentina	557,096	854,384	987,509	77.3%
Bolivia	54,749	49,307	74,040	35.2%
Brazil	...	1,520,554	1,002,574	-34.1%
Chile	358,278	370,016	377,958	5.5%
Ecuador	173,703	176,179	185,166	6.6%
Guyana	7,353	30,735	...	318.0%
Paraguay	22,512	31,136	34,639	53.9%
Peru	293,713	...	...	NA
Suriname	...	...	19,613	NA
Uruguay	...	...	59,397	NA
Venezuela	33,660	41,129	41,709	23.9%
Asia				
Bangladesh	102,499	105,791	105,157	2.6%
India	...	618,116	...	NA
Indonesia	...	2,053,893	...	NA
Japan	1,170,216	1,144,475	1,125,375	-3.8%
Malaysia	...	124,816	131,511	5.4%
Pakistan	...	...	75,000	NA
Republic of Korea	...	860,150	753,587	-12.4%
Thailand	...	...	634,881	NA
Viet Nam	222,708	227,845	200,225	-10.1%
Middle East				
Georgia	18,961	40,365	...	112.9%
Iran, Islamic Republic of	...	687,768	758,143	10.2%
Israel	138,825	113,337	115,424	-16.9%
Jordan	41,821	41,534	...	-0.7%
Syrian Arab Republic	104,434	113,750	114,595	9.7%
Kazakhstan	94,863	89,863	86,089	-9.2%
Turkey	1,227,533	1,129,606	...	-8.0%

(continued)

Table 1 (continued)
Enrollments in Career and Technical Education
for Selected Countries (1998-2001) by Region

	1998/1999	1999/2000	2000/2001	Percentage Change
Europe				
Czech Republic	315,952	347,320	388,548	23.0%
Denmark	113,728	119,878	...	5.4%
France	1,515,437	1,505,783	1,461,392	-3.6%
Germany	1,729,976	1,735,846	1,740,473	0.6%
Hungary	55,044	50,821	...	-7.7%
Italy	...	636,068	688,093	8.2%
Netherlands	456,479	464,948	487,832	6.9%
Poland	1,768,262	1,758,058	1,725,570	-2.4%
Romania	654,738	573,110	592,465	-9.5%
Russian Federation	1,353,100	...	...	NA
Slovenia	87,544	84,534	...	-3.4%
Spain	444,318	409,189	432,196	-2.7%
Sweden	...	282,478	293,265	3.8%
Ukraine	411,421	...	...	
United Kingdom	3,898,368	4,042,939	4,051,489	3.9%
Oceania				
Australia	...	...	1,213,168	NA
New Zealand	...	...	70,116	NA
Papua New Guinea	15,663	16,015	...	2.2%
Tonga	575	896	897	56.0%
Vanuatu	933	1,665	1,718	84.1%

UNESCO Education Statistics On Line: http://www.unesco.org

Note. For the sake of space, only selected countries are displayed here. All countries not reporting data in any of the three years (such as the United States of America) can not be included in this table.

**Graduates of Vocational and Technical
Education and Field of Concentration**

Using data from the OECD, rather than the UNESCO database, we show that the numbers of vocational and technical education graduates have declined in 12 of 25 countries. Among a sample of OECD and non-OECD countries there are 12 (of 25) which show declines in the numbers of vocational and technical education graduates between 1998 and 2001 (see Table 2). In contrast, 7 countries show increases in the number of graduates in vocational fields. Countries that show decreases include the traditional apprenticeship-oriented systems in Austria and the Czech Republic. However, Germany registered a small increase (5%) in the numbers of vocational school graduates over this time period. Interestingly, the OECD data show a 14% increase in secondary level vocational education graduation in the United States between 1998-2001. I would caution against putting too much stock in this number on the United States, as the National Center for Education Statistics did show a decline over the long run in vocational education concentrators (Levesque, Lauen, Teitelbaum, Alt, & Libera, 2000).

The differences in the data between the enrollments and the graduation rates is problematic, but likely due to the differing ways in which the agencies (UNESCO and the OECD) treated the data collected from national education departments. While it appears that the OECD data defined vocational education as pre-secondary, secondary schooling, and post-secondary (but not higher education) courses, the UNESCO figures rely on a narrower definition focusing on the secondary level. This leads to a larger number of graduates in the OECD dataset. Moreover, there are other key differences in definitions in the two datasets.

Table 2

Graduates of Secondary Vocational and Technical Education
in Select Countries (1998 & 2001)

Country	1998 Graduates	2001 Graduates	Change*
Austria	262,788	184,548	-30%
Belgium (Flemish Community)	190,957	282,614	48%
Canada	235,415	...	NA
Czech Republic	443,103	326,840	-26%
Denmark	...	111,462	NA
Finland	117,606	147,440	25%
France	1,065,294	--	NA
Germany	1,875,263	1,964,872	5%
Hungary	391,566	339,672	-13%
Iceland	6,796	5,697	-16%
Ireland	178,473	94,817	-47%
Italy	1,308,273	1,166,266	-11%
Japan	3,161,976	2,813,670	-11%
Korea, Republic of	915,842	817,363	-11%
Luxembourg	5,325	...	NA
Mexico	52,105	167,088	221%
Netherlands	285,547	355,008	24%
New Zealand	60,675	118,865	96%
Norway	115,935	78,595	-32%
Poland	1,936,681	1,508,195	-22%
Spain	...	450,151	NA
Slovak Republic	191,589	...	NA
Sweden	109,462	87,096	-20%
Switzerland	219,756	199,225	-9%
United States	741,688	862,485	16%

OECD Education Statistics On Line: http://www.oecd.org

Note. * Percentage change is calculated based on the change from 1998-2001.

General vs. Vocational Schooling

One of the most important decisions countries make is how to divide up the secondary education system between vocational and general schooling. Academics and policy makers are increasingly raising questions about the utility of national-level investments in vocational-technical education (Inter-American Development Bank, 2001). Development agencies promote investments in basic education to ensure a country's ability to compete in the global marketplace (The World Bank, 1995). This view was articulated as early as 1963, and was repeated in the 1991 World Bank paper on vocational education (Foster, 1963; The World Bank, 1991).

The UNESCO data (Table 3) show two groups of countries, those with historically low levels of vocational and technical education and those with high levels of vocational and technical education. On balance, countries with a large proportion of the secondary school population in vocational and technical schools maintained their commitment. Only 3 of 14 countries with over 30% of the secondary enrollments in vocational or technical fields saw declines in the proportion vocational Likewise, in countries with a small proportion of secondary-level students in the vocational fields, countries experienced only minor declines in the relative importance of vocational and technical fields.

One possibility is that while enrollments in secondary vocational education and training are stable or declining, governments are shifting to providing more post-secondary vocational education. This model of training, most commonly associated with community colleges in the United States, has seen rapid growth in a number of country studies. However, in data from the OECD there is no consistent cross country pattern to increases of post secondary vocational training. Indeed, of the 16 countries in the OECD database with information on enrollments from both 1998 and 2001, only 5 saw post secondary vocational education increase at a faster rate than the secondary vocational training system.

Table 3

Career and Technical Education as a Proportion of Total Secondary School Enrollments in Selected Countries (1998-2001)

Countries with highest proportion of secondary school enrollments in career and technical education			
Country	1998-1999	1999-2000	2000-2001	Change*
Sweden	...	30.3%	31.6%	1.3%
Norway	31.6%	32.9%	32.3%	0.8%
Switzerland	32.3%	32.7%	32.5%	0.2%
Luxembourg	...	32.9%	33.2%	0.4%
Finland	...	33.0%	34.6%	1.6%
Netherlands	33.4%	33.7%	34.8%	1.3%
Serbia and Montenegro	34.2%	35.0%	35.1%	0.9%
Austria	34.9%	35.0%	35.1%	0.2%
Croatia	37.9%	37.2%	37.4%	-0.5%
Netherlands Antilles	13.4%	44.7%	37.9%	24.6%
Czech Republic	34.0%	36.3%	38.7%	4.7%
Panama	44.1%	44.0%	42.7%	-1.4%
Poland	...	44.9%	43.4%	-1.5%
Suriname	...	...	46.8%	NA
Australia	...	...	46.8%	NA
United Kingdom	48.2%	48.7%	48.4%	0.2%

Countries with lowest proportion of secondary school enrollments in career and technical education			
	1998-1999	1999-2000	2000-2001	Change*
Jamaica	7.7%	...	0.2%	-7.5%
Malawi	...	0.2%	0.2%	0.0%
Barbados	...	...	0.5%	NA
Ethiopia	...	0.6%	0.6%	-0.1%
Belarus	0.7%	0.5%	0.6%	-0.1%
Myanmar	0.6%	0.7%	0.7%	0.1%
Palestinian Autonomous Territories	0.5%	...	0.7%	0.2%

(continued)

Note. * Percentage change is calculated based on either the change from 1998-2001 or the change from 1999-2001 if the earlier data is missing.

Table 3 (continued)

Career and Technical Education as a Proportion of Total Secondary School Enrollments in Selected Countries (1998-2001)

Countries with lowest proportion of secondary school enrollments in career and technical education (*continued*)			
	1998-1999	1999-2000	2000-2001	Change*
United Arab Emirates	0.9%	...	0.8%	-0.1%
Bangladesh	1.1%	1.1%	1.0%	-0.1%
Eritrea	0.7%	0.9%	1.1%	0.4%
Armenia	...	...	1.3%	NA
Pakistan	...	...	1.3%	NA
Kenya	1.4%	1.5%	1.3%	-0.1%
Ghana	2.2%	1.3%	1.4%	-0.9%
Lao People's Democratic Republic	1.3%	1.4%	1.4%	0.1%

UNESCO Education Statistics On Line: http://www.unesco.org

Note. * Percentage change is calculated based on either the change from 1998-2001 or the change from 1999-2001 if the earlier data is missing.

Financing of Vocational and
Technical Schooling

Most international experts assume that vocational and technical education is more expensive then general secondary schooling(Tsang, 1997). For example, in a recent study for the World Bank of vocational and technical education in Africa, Johanson (2002) reported that ratios of vocational and technical education costs to general secondary education range from 0.8 in Togo to 13.8 in Mozambique. In other words, for every dollar spent in Mozambique on secondary education, vocational and technical education receives almost $14. This high unit cost of vocational schooling is still a major issue for governments and has led at least in part to a decline in support for secondary vocational education internationally. As we discuss below, the general problems with costs and financing have led to a general view that governments should support enterprise-based training where firms can share more of the funding burden and have encouraged the development of financing schemes like training levies that enable governments to collect more resources from firms (Herschbach & Gasskov, 2000; Ziderman, 2001).

International Agencies: Policies and Role

A Brief Discussion of the
Role of International Agencies

The literature on international development and comparative education has shone a spotlight over the years on the critical role that development institutions play. In a 1994 paper, Noel F. McGinn (1994) pointed out the increasing importance of multinational organizations and companies in national development. Castro (2000; 2002) described the particular role of the IADB and the World Bank in terms of educational policies, focusing specifically on laying out the trade-off between support for education

reform and the use of conditionality to target changes in education locally. Studies by Karen Mundy have refined both our understanding of the role of these institutions and the specific place they have in the policy-making process (Mundy, 1998, 2002; Mundy & Murphy, 2001).

Mundy (2002) interviewed many employees of the World Bank, describing the movement of the Bank from a financing institution in the post-World War II era to an agency focused on promoting specific policy objectives in education. During the 1980s, Mundy pointed out, the Bank refocused on structural adjustment as a strategy to create policy changes in education while providing increasing resources to the sector. The "Washington Consensus," as it was called, used lending to government sectors (e.g., agriculture, education) to promote the economic logic of efficiency, and specifically to encourage a greater role for the private sector in education and training. As Castro (2002) stressed, however, the Bank was largely ineffective in changing governmental policy.

The roles of other international institutions, such as UNESCO, the ILO ,or even the European Union's Leonardo de Vinci programs, have received less attention in the academic literature. While we know that regional development banks, such as the African Development Bank and the Asian Development Bank, have critical roles in lending to vocational education and training, there are relatively few academic studies tracking their involvement and reflecting on their impact on national systems in developing countries. An exception is the study by Chabbott (2002), which describes the specific role of organizations such as UNESCO in establishing the Education for All conference. Additionally, in a paper for the Asian Development Bank, Adams (2002) described the evolving role of that agency in the international development field, focusing on the development of new policy directions in education. Moreover, studies of particular country-level programs exist for the Leonardo De Vinci initiative, and there are some

studies that track the implementation of EU initiatives (Rouhiainen & Valjus, n.d.).

While scholars of the evolution and functioning of the international agencies do not often deal specifically with vocational education and training, the international organizations themselves have frequently dealt with this topic, and vocational education and training has long been a critical area for debate about the relative importance of education for employment in national development (Middleton et al., 1993).

**Shifting Patterns of Support for
Career and Technical Education**

Funding for vocational education and training by the international agencies has fluctuated over the last 2 decades. The World Bank's experience is similar in many respects to other agencies. The World Bank's education projects with vocational education and training components comprised 73% of total lending between 1970-1979, but declined to 29% of project lending between 1990-1999. The regional development banks (e.g., The Asian Development Bank, The African Development Bank, and the Inter-American Development Bank) have historically spent large sums on funding vocational education. The Asian Development Bank allocated 48% of its education sector lending on vocational education and training over the period 1970-1990. Between 1991-2001 the proportion of education sector lending spent on vocational education stood at 14% in the Asian Development Bank.

The projects funded by the regional development banks and the World Bank have changed considerably within the broad area of vocational education and training. Historically, the banks funded basic expansion of services in secondary vocational schooling. However, this area of funding has shifted fundamentally in recent years. The Asian Development Bank has made approximately 11 loans in

vocational education and training since 1997. While the loans do support basic development of secondary vocational schooling, they increase support for systems development in vocational education and training, skills development for both the unemployed and highly skilled workers, and involvement with the informal sector or economic development work with small and medium-sized employers.

Similarly, the portfolio of the World Bank in vocational education and training has shifted. Although the funding for traditional secondary vocational education has dropped off somewhat, there has been a dramatic increase in informal sector training. The 24 projects funded since 1990 in VET have included extensive support for "center"-based training, focusing on increasing opportunities within industry training and a consistent support for labor market information systems.

Goals for Vocational and Technical Education

As mentioned earlier, three agencies (the IADB, the World Bank, and the ILO/UNESCO) have recently developed documents outlining policy options for the future of career and technical education. These papers vary in their stage of production and the formality of the policy directions they explore. The ILO/UNESCO document, "Revised Recommendation Concerning Technical and Vocational Education," offered the most formal statement, providing recommendations about the structure and function of technical and vocational education. It was formally adopted by the governing committee for UNESCO and ILO in 2001. The IADB strategy paper "Vocational and Technical Training: A Strategy for the IDB" was approved by the IADB Bank of Governors in 2000. Finally, the World Bank has issued a number of studies on the future of vocational education and training in Africa. The summary document "Vocational Skills Development in Sub-Saharan Africa" was produced in 2002 and summarizes the results of a number of

reports from consultants on various aspects of vocational education and training in Africa. This paper, unlike the others, is not a formal policy issued by the World Bank.

The reports vary in their level of detail. All review current research on vocational and technical education internationally and make recommendations for the larger community of policy makers. All of the reports reflect current trends in public policy for international vocational education and training, although the IADB and the World Bank's reports are primarily concerned with Latin America and Africa, respectively. They each deal with the larger issues of secondary vocational education, privatization, and the role of training within firms.

Secondary Vocational Education

The research on the role of development banks has frequently gotten heated, particularly around policy questions that have special relevance to the vocational education and training sector. For example, in the aftermath of the 1995 and 1999 Education Sector Papers, the *International Journal of Educational Development* provided special issues to discuss the implications of the policy provisions emphasized. In the area of vocational and technical education, for instance, the 1995 Education Strategy reiterated the general distrust of secondary-level vocational education as a strategy to support sustained development (The World Bank, 1995). In the original 1991 study the World Bank advocated moving away from secondary vocational schooling (The World Bank, 1991). However, scholars like Jon Lauglo and Kenneth King have questioned this wholesale abandonment of secondary-level preparation. Based on studies of individual countries they have stated that secondary vocational schooling has its place, provided it is adapted to the needs of the labor market (King & Martin, 2002; Lauglo, 1996). Indeed, secondary vocational education is still the predominant form of vocational skills training in most developing countries.

International agencies are moving slowly away from a commitment to secondary vocational education and towards the broader goal of workforce or human capital development (see Table 4). Except for the UNESCO/ILO policy statement, the specific documents that the organizations produce stay away from vocational education as preparation within the classic French/American model of school based vocational education (Castro et al., 2000). The UNESCO/ILO statement reminds us that vocational education and training is for youth over 15 years of age and is "…all forms and aspects of education that are technical and vocational in nature" (p. 8) This broad statement includes in their vision occupational preparation but is also linked explicitly to larger social and economic goals such as poverty alleviation and sustainable development. Likewise, vocational education and training is supposed to facilitate lifelong learning. The ILO/UNESCO statement is likely the most similar to the U.S. view of career and technical education, stating that technical skills and vocational competencies should be taught within the context of general education.

Table 4

Goals for Vocational and Technical Education

UNESCO and ILO

Population: 15+ for specialized vocational education

Definition: "all forms and aspects of education that are technical and vocational in nature…"

System Goals:
1. Prepare for occupational fields
2. An aspect of lifelong learning
3. An instrument to promote sustainable development
4. Method of facilitating poverty alleviation

Educational Goals:
1. Provide technical skills and the beginning of vocational competencies within general education
2. Offer opportunities to specialize in vocational fields within secondary education

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Johanson, 2002 (World Bank)

Population: No age given. Focus on youth in labor market and adults with low levels of basic education.

Definition: "*technical education* is training for technicians, *vocational training* is provision of crafts, and *skills development* is practical competencies, know-how and attitudes.

System Goals:
1. Complement the private sector, do not provide what they can
2. Help build training capacity of private sector
3. Use public financing for disadvantaged groups
4. Provide basic education, informal sector training for women on equity and productivity grounds
5. Reform public training by changing financial and management incentives
6. Strengthen the analytical base for policies on training.

Educational Goals:
1. Ensure that new workers have basic *education*
2. Provide basic *skills* for workers
3. Offer apprenticeship training

(continued)

Table 4 (continued)
Goals for Vocational and Technical Education

IADB, 2001	
Population:	No age given. Focused on youth and adults with low levels of education…
Definition:	"well focused training is investment in human capital" "balance between general and vocational skills"
System Goals:	1. Reform of training institutions 2. New programs and technologies to reach the poor 3. Improve classical vocational training 4. "Diversify" the provision of training 5. Better evaluation
Educational Goals:	1. Integrate basic skills instruction in vocational training 2. Offer certification as a part of the training

The policy statements by the World Bank and the IADB differ from those proposed by the UNESCO/ILO. For instance, the IADB stated that "well focused training is investment in human capital" and offers a "balance between general and vocational skills" (p. 24) Unlike those proposed by the ILO/UNESCO, the IADB does not define what age training should begin to be offered through governments, nor does it take a stand relative to the occupational orientation of the vocational and technical education. In fact, there seems to be a general pattern in the review of country-level experiences in IADB documents away from secondary-level vocational education that is explicitly occupational in nature. The IADB, however, remains committed to supporting vocational education and training, as recent lending in Belize and other countries has shown.

The World Bank statement is more formal, offering up definitions for technical education and vocational training, as well as skills development. As the report stated,

"The term "TVET" [technical vocational education and training] is used in this review to refer to formal and informal sources for skills acquisition, excluding informal learning on the job. "Skills development" is used generically in referring to the outcome of the learning process and does not refer to the source of skills acquisition." (Johanson & Adams, 2004, p.2)

By formal and informal sources of skills acquisition Johanson & Adams (2004) refer to a wide array of educational programs, including technical education and vocational training. These programs include traditional career and technical education as well as skills development within employers, including apprenticeships and entrepreneurial training. The particular goals the World Bank report outlines includes a focus on using vocational education in the public sector only when the private sector is unable to provide these services or there are insufficient incentives to support training for disadvantaged groups. This fits into the broader emphasis in World Bank policy to promote private sector involvement.

Privatization and the Relationship with Industry

One of the core issues for development agencies is the emphasis on privatization of public services. As Klees (2002) has discussed, the Washington Consensus in the 1980's led to a general focus in World Bank lending on supporting movement of public goods to the private sector. There is, as Klees discussed in detail, a belief that the private sector can and should take over any state services that they can run efficiently and that the role of government should be seen as the provider of services as a last resort, and only in the situation where government cannot operate these efficiently. Moreover, there is a general view that government needs to encourage cost sharing through user fees. For example, even if services are provided through government institutions they need to share the costs of service provision with the parents and students.

The issue of privatization is applied to vocational education and training is particularly complex. Economic justification for supporting education draws a sharp line between general skills training and specific skills training (Becker, 1993; Johanson, 2002). Right from the start, scholars of human capital theory supported compulsory schooling with the view that students master skills that are generalizable and lead to higher education or potential employment in many fields. In contrast, training is often in specific technical areas and therefore is not considered appropriate for government investment. This dichotomy is debated frequently by scholars in vocational education, and the economics of education more broadly, as in practice it is exceedingly difficult to decide where to draw the line. Many governments do support training at the corporate level in significant ways, and indeed scholars have shown that this commitment to training has led to sustained economic growth in developing Asian countries (Ashton, Green, James, & Sung, 1999).

One of the critical design issues for leaders in career and technical education is how to relate to the other educational sectors. The classic dilemma for a large ministry of education in a developing country, for example, is whether career and technical education needs to be governed through secondary education or can be established as a separate department. As Herschbach and Davis (2000) pointed out, these kinds of questions are "macro-level" educational planning and raise issues that are social and political as well as technical in nature. This is not simply an administrative issue, and the larger question of partnerships with other educational organizations, business, and social partners receives a lot of attention from development agencies. For example, the most important distinguishing characteristic of high-profile systems in Europe is the established relationships by business and other social partners in education and training (Culpepper, 2003; Lasonen & Rauhala, 2000). The quality as well as the social acceptance of career and technical education in Germany is largely due to substantial relationships with business associations and industry.

International agencies have long supported the German, or dual system, model of career and technical education in principle, but the support at the project level has varied. Many of the projects from the Asian Development Bank in recent years have emphasized supporting the secondary-level career and technical education systems, while the support in African nations has shifted more towards enterprise-based training (Asian Development Bank, 2002; Johanson, 2002). Table 5 summarizes the relationship with education and industry embedded within the new policy reports. In the first column we note that the international agencies are continuing to support the position that career and technical education comes after basic or primary schooling. Only one report, ILO/UNESCO, supported keeping career and technical education at the secondary level outright. It is offered as an option for secondary education students at the upper secondary level. The World Bank report by Johanson seems to favor keeping an option of secondary level career and technical education, but emphases that public sector schooling needs to be improved based on principles of the market. Johanson & Adams (2004) conclude that "the new approach to rationalizing the role of the public sector in training is built upon the principles of reduced public involvement in provision, partnership in governance, increased reliance on market mechanisms for greater relevance, and efficiency" (p. 73).

Table 5

Privatization and the Relationship with Industry and Educational Partners

UNESCO/ILO (2002)	
Relationship to Primary or Basic Education	VET role is to provide instruction in technology education and offer career development
Relationship to Upper Secondary Education	VET offered as an option for specialization within upper secondary schools
Relationship to Industry	Specialized "coop" training offered through employers for youth
Relationship to Informal Sector	VET should "improve the performance of enterprises and the employability of workers to transform…into decent work."

Johanson, 2002 (World Bank)	
Relationship to Primary or Basic Education	VET comes after basic education or in conjunction with basic skills development
Relationship to Upper Secondary Education	"regular vocational school have to be redirected to areas that are in greater need of skilled labor"
Relationship to Industry	Multiple, 1) industry directly provides training, 2) private sector offers training, 3) private sector pays for training through taxes
Relationship to Informal Sector	Major role of training to provide skills to informal sector, often through traditional apprenticeships.

IADB 2001	
Relationship to Primary or Basic Education	Basic education can be integrated in for adults and vocational education should only follow after strong primary schooling
Relationship to Upper Secondary Education	NA
Relationship to Industry	Vocational training can be offered through employers paid for by levies
Relationship to Informal Sector	NA

One area of general agreement concerns the relationship with industry. All of the reports emphasize the importance of including career and technical education as an option within employment. The agencies differ on the direction of the policy advice, however. For instance, UNESCO/ILO supports cooperative training through employers, while the World Bank and the IADB emphasize employers subsidizing training through training levies. One area of increasing importance is the use of career and technical education to provide training for adults working within the informal sector. This approach to training is particularly critical as labor markets shift within developing countries, and many African nations in particular have established training programs in entrepreneurship (Johanson, 2002; King & McGrath, 1999).

A third policy issue raised by the development agencies with special relevance to vocational schooling is the continuing effort to encourage firm-level training through government policy. Recent studies from Gill, Fluitman, and Dar (2000) and Johanson and Adams (2004) have provided some basis for stating that governments have increasingly used incentives, such as tax levies, to promote training. As Ziderman (2001) described, as firms (especially small and medium sized firms) under train, governments need to play an increasingly active role in promoting training. However, Ziderman went on to show that national training funds need to be carefully monitored for sustainability of financing and that proper controls are in place to assure that funds are spent on appropriate training activities. Ziderman also reported that training levies have become increasingly important in financing training within firms. While there are problems with the use of levies, they are a strong role for government in directing training among firms. These programs are used in the U.S. as well, often as reductions in unemployment insurance taxes (Government Accounting Office [GAO], 2004).

Unlike the traditional German system of apprenticeships, current models rely on market mechanisms

to increase the skills levels of out-of-work youth, informal sector workers, or incumbent workers needing re-tooling. Firms are given state funds through tax systems that collect from firms a portion of payroll taxes. Firms can then carry out training interventions (Herschbach & Gasskov, 2000). This model could be problematic from a theoretical perspective. As Ziderman (2001) pointed out, the strategy often results in training for large firms, but does not necessarily benefit small or medium-sized companies. Moreover, if firms are simply using the funds to provide specific skills training, the state is then subsidizing activities that firms would undertake on their own. To address this concern, many countries (and states in the U.S. context) carefully monitor spending under these levy systems (Moore, Blake, Phillips, & McConaughy, 2003). However, the tax levies are subject to intense political conflict over allocation of resources (GAO, 2004).

Table 5 offers some details about the relative weight the development agencies are putting on enterprise training or training within the informal sector. Many of the loans granted by agencies are focused on upgrading workers skills or improving training quality, rather than providing entry-level career and technical education. For example, Johanson (2002) pointed out that 93% of ongoing World Bank projects included informal sector training, a major increase over projects completed in the 1990s. Moreover, in 43% of the current World Bank projects, they have emphasized training funds. Table 5 shows how the three development reports emphasize in firm-level training. The World Bank emphasizes training within firms as the most appropriate alternative to school-based vocational schooling. The IADB, similarly, stresses that model training must include enterprise-based schooling. These increasing connections with firms are seen as a way to remove rigidities in vocational education systems. Interestingly, the three organizations emphasize national vocational qualifications as a strategy to improve the curriculum and training within firms.

**Curricular Focus of Vocational
Education and Training**

The reports also described suggestions about the curriculum and role of national government in certifying the curriculum according to international agencies. The agencies generally refocused vocational education and training from occupational training to a hybrid of academic and vocational instruction. As the UNESCO/ILO report described, the curriculum for vocational education needs to be interdisciplinary, skills that can be used in more than one or two occupations. This focus on generalizable skills is largely in response to the evidence that employment and occupational training are often not strongly related (Hawley, 2003b; Neuman & Ziderman, 1999). Moreover, the World Bank and IADB reports emphasized the importance of integrating basic skills training and vocational preparation. The emphasis on basic skills seems to be grounded in the perception that vocational education and training is best suited for individuals who have completed primary and secondary education. Certainly in the United States, vocational education reform has resulted in fewer occupational courses in high school and more focus on academic training (Silverberg, Warner, Fong, & Goodwin, 2004). Furthermore, curriculum must be integrated with business needs and offer competency-based instruction.

There is similarly a restatement of the growing importance of competency based training. While individuals are supposed to master technical skills, these skills are intended to be imbedded within national vocational qualifications or other standards which are certified through industry. As the World Bank report described, national vocational qualifications help to remove the rigidity of the skills training systems because they allow training to be connected more formally with employer skills demands (Johanson & Adams, 2004). National qualifications frameworks allow countries to integrate training within firms, leaving government to focus on certifying the competencies that individuals master. These systems are modularized, enabling more flexibility in the delivery of training, and can

be designed to meet short-term as well as long-term skills needs(Johanson & Adams, 2004).

Conclusion

This paper reviewed national level statistics and key documents on international assistance in career and technical education policy. It provides a sense of the directions international agencies and nation states are taking their career and technical education systems. Moreover, it raises other questions for future study.

The statistical evidence shows the shifting reliance on work-oriented schooling at the national level, particularly in nations with a historically small commitment to career and technical education. Overall, more nations are experiencing growth in career and technical education enrollments. While there remain contradictions in the data sources from UNESCO and the OECD, the overall data show that about two-thirds of nations are experiencing increases in vocational or technical education.

Despite the increases in enrollments, it is difficult to conclude that vocational education and training is increasing. In part, this difficulty exists because there is growth at the post-secondary level and an increase in cooperative or firm-specific programs that may not be counted in national-level statistics. For example, China has made a substantial commitment to vocational and technical schooling, particularly by emphasizing firm-oriented training (Fallon & Hunting, 2000). Currently in Korea, enrollments for secondary and post secondary vocational schooling are approximately equal, and the country is focusing increasingly on vocational training for the unemployed and underemployed rather than entry-level schooling (Lee, 2000). Counties in Latin America's are increasingly dealing with reforms of the SENAI occupational training systems, and are concerned with how to incorporate technological oriented schooling (Wilson, 1996, 2001). Within the African countries, as the recent World Bank review make clear, support for vocational education and training has suffered both because

of a loss of financing but also because of difficulties with the demand for high-skill employees (Johanson, 2004). In this context, the focus appears to be on vocational training and the informal sector in order to combine job creation with educational training.

Within this context, international organizations draft policies that will govern lending and programmatic activity within nation states. The level of recent policy activity is encouraging and shows a renewed interest in career and technical schooling on the part of international organizations. It is difficult to judge whether or not the level of funding for vocational education and training has increased, but in recent years there has been substantial activity by lending agencies in vocational education and training. The changes in the number of loans or grants in vocational education and training must be put into context, as interest in basic education has remained extremely high with the Millennium Development Goals and the push to achieve the success of this complex series of policies.

Additionally, as we learned from a review of three areas of policy support, goals, relationship with partners and privatization, as well as educational focus, the policies have shifted somewhat. In terms of goals, there appears to be a movement towards integration of vocational education and basic skills development or vocational education. Furthermore, there is a strong push to promote employer level training, often as a substitute for school-level instruction. This refocuses the purpose of vocational schooling to serve business and industry directly, rather than an emphasis on society. Except for UNESCO/ILO there appears to be little support from international agencies for funding vocational schooling at the secondary level.

On the other hand, there is a major interest in broadening the curricular focus of career and technical schooling. There is little support for very specific occupational training at the secondary level. While the reports do continue to support specific skills training for adults within the context of post-secondary schooling, schooling at

the secondary level needs to integrate basic skills and offer youth the opportunity to continue on to higher education. In fact, it seems that many countries have already taken steps to ensure that vocational training at the secondary level offers broader skills, and we know from published reports that vocational education in places as diverse as Korea, Thailand, and Sweden offers students the opportunity to enter higher education (Lee, 2000).

Within this context of a broader focus, leaders in Career and technical education must consider the intense attention the international organizations are giving to entrepreneurship training or skills training for unemployed or underemployed. This emphasis expanded in the Asia Pacific countries after the economic crisis in 1997. Korea, Thailand, Malaysia, and Singapore all faced increasing demand for skills training programs for adults and adapted the funding structure to provide more adults access to skills development training. The development banks offered critical assistance to national governments after the economic crisis and provided funding to expand these skills training programs (Asian Development Bank, 2002). This focus is also critical within African countries, but for different reasons. The labor markets in many African countries are not as developed. Because of this lack of development there are relatively few private sector jobs. Therefore, in countries like Uganda the skills training programs offer considerable assistance to men and women who have not been able to obtain employment in the formal sector and need additional skills development (Johanson, 2002; King & McGrath, 1999).

Implications for Future Research

Vocational-technical education is increasingly important as governments struggle to develop their workforces to compete in the global marketplace (Ashton et al., 1999; The World Bank, 2000). In the human resource development field, scholars have begun to draw attention to the actions of government, stressing the importance of integrating the development of a technically skilled workforce with the business goals of firms. In this vein, scholars have

developed the concept of National Human Resource Development (NHRD) (McLean, 2003). Moreover, scholars continue to struggle to understand the relative role that intergovernmental agencies like the World Bank play in educational policy and practice (McGinn, 1994).

This study has tried to advance our understanding about the relative status of vocational-technical education and training. There remain questions, however, about both the status of this critical part of educational systems and the role of international agencies.

Remaining Questions about the Status of Vocational Education and Training

Statistics on vocational education and training reveal the progress that countries are making in increasing enrollments in this area of education across the world. However, there remain particular problems with concluding that vocational education and training is growing. For example, since vocational education and training systems differ across countries, what is counted as vocational education differs across national borders. For example, in China vocational training in firms has been growing rapidly as the economy has developed (Fallon & Hunting, 2000). Moreover, vocational training in Africa or the Middle East often combines economic development and training, offering government resources on top of training (Abdulaziz, 2004). Finally, the growing use of human resource development across countries shows that firms are increasingly using technical training with workers (McLean, 2003). Therefore, what counts as vocational education and training is becoming more critical. Future research can help by categorizing the types of vocational education and training across national contexts. These revised categories might help assess the strengths and weaknesses of cross-national data sets.

Role of International Agencies

International agencies play a critical role in development. They have increasingly offered support in new ways to

governments. In contrast to support for secondary vocational education, they are currently supporting a wider range of vocational education and training initiatives, often focusing on improving linkages between training and employment. This expanding role, however, has been met with relatively little academic scrutiny. As Mundy (1998) and McGinn (1994) pointed out, the increasing role of international agencies raises questions about the relative role of the national state and international agencies in education policy. If the World Bank or the Asian Development Bank are making decisions about what kinds of vocational education to support, that may take power away from a national government. The process of decision making that agencies and their host country governments engage in to determine the direction of educational reform often takes key decisions out of the hands of the nation state (Reimers & McGinn, 1997). Future research should continue to address the difficulties in national policy development that arise when outside organizations play a leading role in decision making, particularly in areas like vocational education and training, that are intimately related to economic development.

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