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VOCATIONAL TEACHER EDUCATION IN AN ERA OF CHANGE: THE UNITED STATES EXPERIENCE

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ABSTRACT

The focus of more recent educational reform in the United States has been on student achievement. As educators began to work with new reform they quickly realized that success depended on the preparation of quality teachers. This article focuses on vocational teacher education which like other teacher education areas has for some time been involved with the educational reform movement in the United States. Historical and philosophical contexts for vocational teacher education are first presented, followed by a discussion of their impact on vocational teacher education and relationships to current reform. Promising new directions for the preparation of vocational teachers are then offered and ways teacher education delivery might be provided are discussed. Finally, several continuing issues and concerns in the preparation of vocational teachers are discussed.

OVERVIEW

In the United States, over the past decade, educational reform has been more the rule than the exception. Stimulated during the 1980's by a weak economy and low student achievement scores, the focus of educational reform was initially on students: how they could learn more in school and be better prepared for their futures. As a great number of reports were released describing the need to change what students were taught and how they

were taught, it was quickly recognized that if changes in school reform were to ever be successful, the preparation and continuing development of teachers also had to change. This discussion centers on vocational teacher education which like other teacher education areas has for some time been caught up in the educational reform movement in the United States. Within this broad, nationwide emphasis on educational reform, vocational teacher educators have begun to realize their teacher preparation and development programs must change if they intend to remain as major players in the teacher education enterprise. Initially, a brief overview of the historical and philosophical contexts for vocational teacher education in the United States is offered. This serves to describe some of the philosophical and historical burdens vocational teachers have been carrying over the years. Then, several major legislative and philosophical developments and their relationships to current educational reform are described. This information aids in highlighting vocational teacher education's rather unique mission and character as well as what it has in common with other teacher education areas. Promising new directions for the preparation and continuing development of vocational teachers are then presented and ways teacher education delivery might be conducted are discussed. Finally, several issues and concerns in the preparation of vocational teachers are provided.

TOWARD A LEGISLATIVE PHILOSOPHY OF VOCATIONAL TEACHER EDUCATION

(Portions of this article were drawn from several recent publications related to vocational education and vocational teacher education in the United States (Finch, 1997a; Finch, 1997b; Finch, 1999; Finch & Crunkilton, 1999)).

Although vocational teacher preparation has a long and rich history, its transformation from an informal process of conscious imitation to formal bachelor's and graduate degree programs continues to evolve. Recent legislation has hastened that evolution, especially in areas impacting directly on teacher preparation and development. Legislative changes are considered by some people to be more revolution than evolution. However, others believe changes offer tremendous opportunities to reinvent vocational teacher education for the 21st century.

In the early 1900's, a rather strong national public sentiment for federal aid to vocational education had developed in the United States. As the need for skilled workers increased, industrialists and labor leaders believed that a new national policy could be the starting point to improve quality in preparing persons for skilled positions in the workplace. These feelings were formally presented to the federal government through national organizations. Groups such as the National Society for the Promotion of Industrial Education and the Association of Agricultural Colleges and Experiment Stations led the battle to obtain federal aid for vocational education (Finch, 1991). However, the movement to secure federal support was not without controversy. Pressure to institute vocational education legislation in the United States

stimulated a debate between those who believed public schools were places where only liberal studies should be taught and those who believed vocational education should be incorporated into the public school curriculum. The choice at that time was "whether schools are to become servants of technocratic efficiency needs, or whether they can act to help [persons] humanize life under technology" (Wirth, 1972, p. 1). Charles Prosser, a nationally recognized vocational education leader, strongly supported the idea of social efficiency which contends that American schools should be reformed to meet the needs of a technocratic society. Philosopher John Dewey believed that the industrial education movement of the day had some positive potential but felt it should prepare the way for a humane technological society, "a place where science, technology, and democracy would complement each other" (Wirth, 1972, p. 3). Dewey closely monitored the movement, examined the proposed legislation and spoke out against certain of its aspects. For example, he opposed dualism which was in effect the separation of academic and vocational

education programs. This was an idea that Prosser strongly supported.

Eventually, legislators supported federal legislation that would provide each state with financial assistance in the establishment of vocational education offerings. The result of this effort was passage of the Smith-Hughes Act in 1917, the first less than university level vocational education legislation in the United States. This landmark legislation provided federal funding in support of agriculture, trade and industrial, and home

economics programs. Unfortunately for John Dewey, his adversary Charles Prosser ultimately became the primary author of the Smith Hughes Act (Finch, 1997b). Prosser's involvement in the legislation insured that it include some funding in support of vocational teaching and administrative activities, thus initiating the formal separation of vocational and academic teaching and teacher education.

The Prosser philosophy became firmly imbedded in the Smith Hughes Act and for almost 50 years related legislation remained virtually unchanged. Even though a number of different vocational education laws followed the Smith Hughes Act, the Vocational Education Act of 1963 was the first to reflect an observable philosophical shift from the 1917 legislation. Essentially, the 1963 Act stipulated a more comprehensive approach to vocational education and demonstrated for the first time a total Federal commitment to funding vocational education. Subsequent legislation further demonstrated the strong Federal commitment to support vocational education and to maintain it as a system that was to a great degree separate from academic education (Finch & McGough, 1991). This has been the context in which vocational teacher educators' personal philosophies of teaching were formed. It thus comes as no surprise that most vocational teacher education curricula in the United States had at some time incorporated a Smith-Hughes Act/Charles Prosser philosophy into their course content and delivery.

A MAJOR LEGISLATIVE AND PHILOSOPHICAL SHIFT

Formal federal recognition of the need for national emphasis on school-to-work transition originated with the Carl D. Perkins Vocational and Applied Technology Education Act of 1990 (Perkins II). This legislation, which is grounded in the notion that the United States is falling behind other nations in its ability to compete in the global marketplace, reflects the evolution of federal support for vocational education. Among its various provisions, Perkins II legislation offered the 50 states financial incentives to create and operate education programs that have as their goal producing workers who function more effectively and thus increasing United States competitiveness in the current and future international workplace. The Perkins II legislation ushered in a new era of preparing students to enter and succeed in the workplace. For example, the law shifted emphasis from reactive and rigid vocational education curriculum and instructional models to those emphasizing innovation, flexibility, and collaboration. In contrast with earlier laws that contributed to a wide separation between academic and vocational education, the Perkins II legislation supported the integration of academic and vocational studies. Also included in the Act were provisions for using a concept called Tech Prep to formally link high school and post-high school technical studies in creative ways. Since the legislation enabled educators to become more proactive and less reactive in the design and implementation of vocational education programming, it has provided them with many implementation challenges (Finch, 1997b, p. 72).

IMPACT ON VOCATIONAL TEACHER EDUCATION

From a vocational teacher education perspective, the Perkins II legislation is most significant. For the first time in over 70 years, a major philosophical shift in vocational education legislation had occurred. A review of the Perkins 11 Act reveals that Prosser's philosophical beliefs such as social efficiency and educational dualism have given way to Dewey's philosophical views including the creation of a more humane technological society and providing schooling that focuses on collaboration in meeting students' technological and humanistic needs. From a more pragmatic point of view, the legislation has stimulated all educators to rethink what they have been doing for so many years, discover new ways to design more relevant curricula, and provide more meaningful integrated and articulated instruction (Finch, 1997a). This legislative shift has likewise provided vocational teacher educators with opportunities to reconsider ways that teacher education and development might change to meet the current and future needs of vocational teachers and their students.

As expected, the rethinking process has been very traumatic and reaction has been varied. Some vocational education administrators have considered retrofitting mandates so they align with existing programs. Some vocational teachers have wondered how they might avoid getting involved in collaborative curriculum and instruction efforts with teachers of academic subjects. And some vocational teacher educators have begun wishing for the good old days when it appeared that teacher preparation was not so complex. For all these

groups, a fundamental problem with Perkins 11 legislation has been that, to paraphrase a famous British tune, it turned the world upside down. Some people felt the educational reform described in Perkins 11 has thrown out over 70 years of sound, traditional vocational education. However, others have viewed this legislation as an tremendous opportunity to change from an outdated system to one that will better serve students who are preparing to enter the world class workplace.

PROMISING DIRECTIONS

During the past decade, both the need and opportunities have existed to reform vocational teacher education. In some locations, teacher educators have accepted the challenge to change and the effect has been positive. In other locations, they have not embraced change and results have been disappointing. In light of recent educational reform, several developments that relate to potential change in vocational teacher education are highlighted. They include the impact of recent educational reform, research contributions to vocational teacher education program reform, and rethinking vocational teacher education.

IMPACT OF RECENT REFORM

Legislation in the 1990's has provided educators with a useful starting point from which to reform education. Among changes supported by Perkins 11 and/or the more recently enacted School-to-work Opportunities Act (STWOA) are Tech Prep (technical preparation programs that link together two years of high school study with two years of post-high school study); the integration of academic and vocational education; linking school and work-based learning in meaningful ways;

school-to-work transition; and building strong alliances between the schools, the workplace, and the community. How have educators in general and teachers in particular coped with these reforms? Results of the most recent National Assessment of Vocational Education (Office of Research, 1994) revealed that four years after passage of the Perkins 11 legislation much resistance still existed to the implementation of both Tech Prep and integration. Additionally, many secondary vocational education programs were still quite traditional in both focus and operation and educators were trying to fit reforms to their existing curricula. However, there is some evidence that reform has stimulated schools to improve the ways teaching and learning occur. Also, in some school settings, the process has had positive impact on students. A graphic example of this positive change may be found in the Southern Regional Education Board's High Schools That Work (HSTW) Consortium. Utilizing current educational reform as a starting point, the HSTW Consortium of 700+ high schools is redesigning and reshaping education so they better prepare students for future employment and education (Bottoms, 1993). Some of the key practices incorporated in to HSTW high schools include: establishing higher expectations for students in academic and vocational classes; shape vocational courses so they emphasize math, science, and communication competencies; refining academic courses so they are taught through functional, applied approaches that enable students to see the relationships between course content and the future; requiring students to complete a challenging program of study, encouraging academic and vocational teachers to integrate curriculum and instruction by providing

them with staff development, materials, and time to work together, and revising the instructional process so students are actively engaged in their learning.

Unfortunately, even though an increasing number of schools are undergoing reform and their efforts appear to be paying off, many vocational teacher educators have not kept up with the times. Instead of learning about the opportunities reform provides to improve teaching and learning, there has been a tendency to stay with what has worked in the past. The net result is that some vocational teachers complete their preparation programs without being exposed to new curriculum and instructional approaches that are now being used in the schools.

RESEARCH CONTRIBUTIONS

So what may be done to help prepare vocational teachers for their new and emerging roles in the schools? How can teacher educators learn more about changes in the schools that may affect the content and delivery of their vocational teacher preparation programs? Fortunately, several studies have been conducted that identified a set of new capabilities all teachers will need and how these needs may be met. Although a number of studies have focused on this area, several are highlighted because they are national in scope and explore the roles of both academic and vocational teachers in school environments where contemporary reform has been initiated. Research focusing on teachers' roles in the integration of vocational and academic education documented experiences of vocational and academic teachers, principals, other administrators, and counselors who had successfully implemented integration in their

schools (Schmidt, Finch, & Faulkner, 1992). Based on this research, professional development approaches educators can use to facilitate the integration of vocational and academic education were delineated (Finch, Schmidt, & Faulkner, 1992). These approaches can assist educators in learning to function as members of professional teams, including, teams operating within and across institutions. Case studies based on the integration research were prepared that can aid educators in developing problem-solving, decision-making, and team-building skills as they implement integration in their schools (Schmidt, Finch, Faulkner, & Kandies, 1995). The 46 cases are organized into four functional themes: (1) Cooperative Efforts, (2) Curriculum Strategies, (3) Instructional Strategies, and (4) Administrative Practices and Procedures. Cases were field tested with more than 400 teachers. The set of cases has been well received by educators in the field.

Teacher involvement and contributions to school-to-work transition was the focus of a more recent study (Schmidt, Finch, & Moore, 1997). It was posited in the research that teachers engaged in school-to-work transition activities would have a wide range of new and different responsibilities. In this study, teacher activities were identified that contribute to school-to-work success as well as characteristics teachers must have to conduct successful school-to-work programs. Based on interviews with almost 200 educators and business, industry, and community representatives; the results have numerous implications for the field. A companion report details strategies that may be employed to meet teachers' professional development needs as they implement school-to-

work transition (Finch, Schmidt, & Moore, 1997). Thirteen areas of professional development practice were identified and described in the words of teachers who participated in them and others who were aware of teachers who engaged in different practices. Collectively, these reports offer new ways of conceptualizing how professional development links with educational reform and provide examples and cases that may be used to assist both academic and vocational teachers as they prepare to work in reform contexts.

RETHINKING VOCATIONAL TEACHER PREPARATION

In response to economic developments, changing legislation, research, and other findings and concerns; vocational teacher educators have begun reconsidering what the focus of vocational teacher preparation should be. Some of this effort has been based on research and some shaped through writing and discussions. Several examples of ways vocational teacher education programs may be reconfigured are offered. Each example has a somewhat different focus, however, collectively they capture the range of potential possibilities available to vocational teacher educators who want their programs to be focused in more meaningful and productive ways.

PRINCIPLES UNDERLYING VOCATIONAL TEACHER EDUCATION

Principles that can serve as a foundation or framework for vocational teacher education have to be examined and debated for some time and much progress has been made. The most comprehensive effort in this area has been conducted by Richard Lynch at the University of Georgia. Over a period

of several years, relevant materials were examined and University Council for Vocational Education representatives met and discussed draft statements. The result was formulation of ten principles that can serve as a new foundation for vocational teacher education (Lynch, 1996, 1997). The principles areas follows:

1. Faculty are committed to their students and to students' professional development as lifelong learners.
2. Faculty use curriculum and instructional techniques to integrate theory with practice, academic and workforce education, professional education and subject matter, and learning theory and workforce preparation.
3. Faculty understand the philosophy, contemporary concepts, research, effective practice, and methods of inquiry related to workforce preparation and development.
4. Faculty use dynamic pedagogy, based on learning theory and practices appropriate for youth and adults.
5. Faculty are partners in learning communities through which they model collaboration and democratic processes for their students.
6. Programs are dynamic and change oriented.
7. Programs are grounded in academic education, workplace subject matter, workplace processes, technology, professional education and pedagogy, and clinical experiences.
8. Programs reflect cultural diversity.
9. Colleges and universities (and their inherent administrative structures) that offer programs to

prepare vocational and technical teachers are committed to such preparation and provide adequate resources to sustain them at high quality levels.

10. Colleges and universities provide a clearly identified group of academic and clinical faculty for whom vocational and technical teacher education is a top priority (Lynch, 1996, p. 77-87).

These principles provide a meaningful starting point for establishing all aspects of vocational teacher education, extending from curricula to assessment. Hopefully, they will be seriously considered for adoption by all universities that prepare vocational teachers.

LINKING VOCATIONAL TEACHER EDUCATION TO WORKPLACE CHANGES

Major consideration for technological changes in the workplace has tended to be omitted from vocational teacher education program planning. As Brown and Davison (1991) commented, "society is experiencing rapid changes that are impacting both educational institutions and businesses. Teacher educators must improve their awareness and understanding of these changes to [prepare] vocational teachers who can function more effectively" (p. 285). They then described areas that need to be addressed by educators who intend to reform vocational teacher education programs so they are more closely linked with technological changes in the workplace. Examples of these areas include the following:

- Programs must be more closely aligned with changes in the workplace and workers' job opportunities and needs.

- Vocational teachers should become skilled as "change agents" to help students develop knowledge, skills, and attitudes needed by a diverse workforce that will be functioning within an increasingly competitive, global economy.
- Teachers and students must adapt quickly and effectively to changes in their immediate and global environments. Research is needed to identify these skills and the methods to teach them to teachers.
- Vocational educators must be prepared and encouraged to use instructional methods that strengthen the work skills of a wider array of students (Brown & Davison, 1991, p. 292).

A key implication from these statements is that vocational teacher educators must prepare teachers who are sensitive to workplace changes and can rapidly include these changes into their vocational education curricula. Unfortunately, the extent to which this is emphasized in existing vocational teacher education programs is largely unknown.

PROFESSIONAL DEVELOPMENT OF BEGINNING TEACHERS

Even though teacher educators often discuss the professional development of beginning teachers, few have tested the assumptions that underlie this process. Based on three years of quantitative and qualitative research focusing on beginning vocational teachers (Heath-Camp, Camp, Adams-Casmus, Talbert, & Barber, 1992), a program focusing on the systematic professional development of beginning vocational teachers was created and tested (Heath-Camp & Camp, 1992). This teacher induction program offers an adaptable and flexible way for beginning vocational teachers

to transition successfully into their new careers and to grow as professional educators. The program's 11 components include: a professional development center, a local professional development coordinator, detailed orientation, structured mentoring, a beginning teacher handbook, a beginning teacher peer support group, systematic administrator support, ongoing, inservice training workshops, certification courses, coaching on reflective teaching, and a professional development plan. Although the program can be quite time consuming to establish and operate and may cost more to administer than traditional beginning teacher programs, the investment has great potential to pay off in the long term. With its focus on sound teacher development principles and holistic development processes, the program should be considered for adoption or adaptation by universities and local education agencies who want to work together and insure their graduates/beginning teachers receive the best opportunities to be successful in the teaching profession.

INTERNATIONAL DEVELOPMENTS: A SUGGESTION AND AN EXAMPLE

Exploration of what vocational teacher education program focus should be has been typically limited to what is occurring in a particular country. Obviously, travel costs, communication problems, and lack of cross-national linkages may restrict what can be accomplished in this area. However, recent developments worldwide have potentially removed some of these restrictions, particularly in the area of access to Internet information. This opens an opportunity to identify what teacher educators in other countries are doing and consider

this information as teacher education program decisions are being made. One case in point is a major European research and development project titled "New Forms of Education of Professionals for Vocational Education and Training" that has been sponsored by the European Commission's LEONARDO program. The project has as its purpose conducting transnational research focusing on the identification of new occupational profiles for vocational education and training professionals as well as establishing new curricula and programs for these people. One of the publications prepared by the project's transnational research team includes a chapter titled "Pressures for Change in the Education of Vocational Education and

Training Professionals" that was prepared by Graham Attwell (1997). The pressures for change documented in Attwell's chapter are largely in close alignment with what vocational teacher educators and others in the United States are saying about the field. Discussion focusing on new roles for vocational education and training and human resource development professionals, the reflective practitioner, future oriented vocational education and training, and a new structure for the education of vocational education and training professionals each offer a wealth of information that has not yet been included in U. S. publications. As the world-class workplace continues to gain prominence, it will become of greater and greater importance for educators to connect with research and development activities conducted in other countries and identify vocational teacher preparation models and practices that have potential for adoption or adaptation in their countries.

THE DELIVERY OF TEACHER EDUCATION

For many years, the delivery or ways in which vocational teacher education is provided has remained largely unchanged. Basically, the university program served as a catalyst for vocational teacher preparation and development with faculty members offering their students face-to-face instruction focusing on relevant course content. But recent educational reform suggests that changes should be made to this traditional process. With its emphasis on teacher team building and collaboration across teaching areas, educational reform has encouraged moving beyond a traditional vocational teacher education agenda. Although numerous approaches exist, the following examples reflect potentially new areas of emphasis for teacher education delivery:

Based on a review of 29 different proposals for reforming teacher education, Cruickshank and his associates (1996) identified six promising approaches to improving teacher education that have been often overlooked in teacher education programs. They can offer students opportunities to apply knowledge in realistic situations and allow greater personal reflection than didactic coursework. The approaches include case studies, microteaching minicourses, protocol materials, reflective teaching, and simulations.

- A study of whole school reform as reflected in high schools in the state of Virginia that joined the Southern Regional Educational Board High Schools That Work Consortium revealed teachers had a wide range of different concerns about the change process (Aneke & Finch, 1997). Although some teachers were very advanced and sophisticated in

terms of change, others were novices in their thinking about educational reform. It was recommended that professional development activities be fine tuned to better accommodate the wide range of concerns teachers have as they become involved with whole school reform.

- In their comprehensive survey of contemporary approaches to teaching and learning, Biggs, Hinton, and Duncan (1996, p. 135) noted that educational reform has implications for the ways vocational teacher education programs should be changed. They recommended that vocational teacher educators understand lifelong learning and model lifelong learning concepts, focus on their own continuous learning, be as familiar with the workplace as they are with the school setting, and provide learning experiences for prospective teachers that reflect the context of the workplace.

- Based on the evolving nature of professional development, Finch et al., (1997) described a paradigm where development assumes a new character that includes greater emphasis on school-based instead of university-based programs, teachers teaching teachers, team teacher development, and continuous development activities. Support for this paradigm may be found in a number of research reports and essays.

These examples reflect the range of creative approaches that are available to deliver teacher preparation and development. If vocational teacher education expects to keep pace with the rest of the profession, promising ways of meeting teachers' needs must be examined. Those having the greatest potential benefit for teacher preparation and

development should then be tried out to assess their value.

CONTINUING ISSUES AND CONCERNS

Although a number of valuable lessons have been learned about how vocational teachers should be educated, broadly-based educational reform in the schools as well as evolving teacher preparation structures and teacher development needs will provide vocational teacher educators with continuing challenges.

VOCATIONAL TEACHER PREPARATION

Legislation, educational reform, and new conceptions of how teachers should be prepared have had direct impact on the vocational teacher education community. Historically, vocational teacher preparation has been the responsibility of university-based vocational teacher educators. These faculty members tend to have education and experience that aligns most closely with Prosser's philosophy of education. Since Federal legislation has shifted focus from education where students' vocational and academic studies are separated to education that integrates the two areas, current trends fly in the face of what many teacher educators have believed and practiced during much of their professional careers,

As reflected in recent legislation, educational reform and thus change should keep vocational education professionals busy for some time. Studies have indicated that teachers must take on new and more complex responsibilities in these educational reform settings. Research has also demonstrated that many strategies are available to assist teachers as they prepare to work in settings where

educational reform such as integration and school-to-work transition exist. Unfortunately, there is little evidence that vocational teacher educators have made major structural changes to their programs. Several informal and formal searches for innovative, cutting edge, vocational teacher education programs have identified only a few that are incorporating needed instruction into their courses. What implications does this have for vocational teacher education? Essentially, vocational teacher educators must embrace contemporary educational and workplace philosophies and practice if they intend to prepare vocational teachers for the next century. Even though this task may require many teacher educators to undergo large scale professional development, it is central to the survival and growth of vocational teacher education programs in the United States.

THE CONTINUING DEVELOPMENT OF VOCATIONAL TEACHERS

Since new teachers enter the vocational education teaching profession at the rate of 5 to 8 percent a year, this leaves a high percentage of practicing teachers nationwide who must receive in-service continuing professional development. But in which areas should these people develop? Research indicates dozens of activities that all teachers can use to help students with their school-to-work transition. Examples include involving students in organized workplace experiences, linking with employers and the community, and including workplace representatives in school curriculum and instruction activities. If teachers want to be more successful at organizing and conducting school-

to-work programs they must develop new talents that extend beyond their current capabilities. Examples of these talents include being willing to change with technological advances, understanding the many needs of employers and the community, and having a knowledge of school-based learning that goes beyond specific teaching areas (Schmidt et al., 1997).

How can teachers in general be developed most effectively and how can vocational teacher educators be of assistance? Little (1993, p. 129) noted the dominant teacher development model that focuses on broadening the individual teacher's expertise in teaching is not adequate to meet teachers' needs in the current reform climate. Vocational teacher educators are thus faced with the responsibility of testing and selecting different teacher development models or even creating a hybrid model that best suits the vocational education field. However, creating a new model that only focuses on vocational teacher development is at odds with what many educational reforms are attempting to do; that is, to turn the educational environment into a place where all teachers work together to better meet students' educational needs.

Answers to the professional development issues that have been raised depend on how eager teacher educators are to personally develop the professional and technological capabilities needed by teachers in exemplary high schools and community and technical colleges where educational reforms such as integration, Tech Prep, and school-to-work transition have been implemented. When teacher educators master the applied level of expertise

needed to be successful in educational reform settings, they should then be quite capable of organizing and operating a professional development model or models that can improve the ways teachers teach.

A FUTURE CHALLENGE

Why has change in vocational teacher education lagged so far behind educational reform in the public schools and what can be done about it? How can vocational teacher educators provide more meaningful professional development experiences for teachers in the schools? Which teacher education delivery models and strategies have the greatest potential to assist aspiring and practicing vocational teachers? Some of these questions have been addressed and all of them certainly must be answered before vocational teacher educators in the United States can prepare teachers for their new roles and responsibilities. Given the reforms that have caused changes to occur in many high schools across the United States, these questions and their answers have equally meaningful application to general teacher education. It has been noted that teachers of both academic and vocational subjects can learn from each other; and when they work together as teams the result can have a positive impact on student learning. Agendas for reform in vocational teacher education should thus include opportunities for aspiring academic and vocational teachers to learn together so they will be better able to function effectively as teams when their teacher preparation has been completed and their employment as teachers begins.

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