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# **TECH PREP: A Proud Choice for Educational Improvement**

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***A Leadership Guide  
for Counselors***



***The Cornerstone of  
Tech Prep Series***

*Produced in conjunction with the American  
School Counselor Association*



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Published by CORD in Waco, Texas

Multiple copies are available from CORD Communications, Inc., for \$3.95 each. For more information, call 800-231-3015.

Printed in the United States of America

September 24, 1999

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## **PREFACE**

Since its inception in the early 1980s, Tech Prep has become a major contributor to educational improvement and a strong influence in making it possible for all students to be high academic achievers. Tech Prep makes a positive difference in the lives and communities of its students because it empowers students to approach their education with a renewed sense of purpose and direction.

The success of any Tech Prep program depends on the committed involvement of high school counselors during every phase of the program's initiation and growth. Counselors are uniquely positioned to promote Tech Prep at their schools and in their communities and to blend Tech Prep into their overall educational agenda.

This book provides practical advice to counselors on implementing effective Tech Prep programs that enjoy enthusiastic local support and are successful in recruiting and retaining students. The book shows that Tech Prep is a flexible program that gives high school students many worthwhile options, whether in the workplace, in further education, or in both.

Many thanks for the painstaking contributions of Nancy Perry, Executive Director of the American School Counselor Association; and Richard Montañó, School to Career Chair, Sunnyside High School, Tucson, Arizona, and President-elect of the Arizona School Counselor Association.

Pat Schwallie-Giddis  
August 1999



## INTRODUCTION

Education in the United States has been undergoing reform throughout the last two decades. No matter who you are or which reform effort you are advocating, everyone seems to agree that we want the very best education for all students. All young people should have equal opportunity to succeed in their career choices. This means the “bottom line” for school reform should be strong career preparation based on sound academic achievement.

That is why Tech Prep is a proud choice for educational improvement. When properly planned and implemented, Tech Prep provides a “win-win” opportunity for all students. Tech Prep provides a sound foundation for a successful career. Because it is founded on the coordination of strong academics with occupational skills and the workplace knowledge students need to make fully informed career choices, Tech Prep is not a limiting choice, but a way to prepare young people for many options—probably more than one career choice in their life journeys.

Tech Prep has already become a proven strategy in many schools throughout the United States. Charley Rouse, former principal of Leander (Texas) High School and a committed Tech Prep practitioner, reminds us that “preparing for a career does not mean preparing for one job. It means preparing for a lifetime of quality experiences.” Rouse has been joined by many principals across the country in recognizing the value of Tech Prep as a process for achieving positive change in their schools (see following quotation).

*One outstanding principal who has adopted Tech Prep is the 1998 NASSP/Met Life Principal of the Year, Elaine Sullivan, Ed.D., Principal at Hernando High School, Brooksville, Florida. Sullivan credits Tech Prep with giving her school a winning edge:*

“As the 1998 NASSP/Met Life Principal of the Year, I am often asked what I believe gave me the edge over other principals. My response is Tech Prep. Tech Prep dovetails with my beliefs about education and is the core for creating change at my school.

“About eight years ago, Hernando High School’s staff began a journey, learning new strategies to reach today’s students. Most teachers believed that they had done everything the right way and that the students were the problem. In conversations with staff members about unsuccessful students, I noted that, as teachers, they might be competent in their approach, but our students were not succeeding. We are judged and rated on our students’ success—or lack thereof. Additionally, our business community had been telling us that students were unmotivated, which we believe impacted their learning. So the journey began—to motivate kids and become more effective teachers in the hope that students would become involved in the learning process.

“Tech Prep has been the nucleus for our approach to whole school reform and serves as the vehicle in our quest to become better teachers and motivate more students. Additionally, Tech Prep transformed my staff into a community of leaders and learners. Teachers started collaborating. School improvement interdisciplinary communication teams became the backbone for communication and for creating committees to take action. Staff members emerged as formal and informal leaders. As a school, we are now more focused on the student and on the need for a career focus.

“We established higher expectations for all students, not just the middle majority. Our curriculum is now more rigorous and relevant. The contextual teaching philosophy and courses have become the guiding premises for reworking

the curriculum and our beliefs about how to teach. This work continues today. We changed to block scheduling six years ago. Opportunities for parallel teaching units or integrated units were created. This next year, the staff will be planning for the next step of our restructuring into career clusters.

“Now we have started learning how to incorporate ‘brain-based’ research and the ‘multiple intelligences’ into our teaching. This is the next piece to be added into our teaching in a contextual setting. The world of work and the career context have become major underpinnings for guiding our school. Tech Prep changed a very conservative, traditional school of more than one hundred years of pride, tradition, and ‘we have always done it this way’ to a leader in educational improvement.”

If you want your school to be a win-win situation for all students and want to involve your whole community in cutting-edge efforts to provide a successful bottom line for all young people, choose Tech Prep.

This book explains the theoretical foundations of Tech Prep, gives a historical overview of its development, shows counselors why Tech Prep is an excellent career-preparation program, and offers practical advice for implementing an effective Tech Prep program that enjoys the support of the community and is successful in recruiting and retaining students. The book also provides useful information on resources, both printed materials and organizations, that can help counselors along the way.

## THE EMERGING CONCEPT

Shortly before 1980, leaders in business and industry began to realize that computer-driven automation and the globalization of the workforce were having a profound effect on how work was done and who would do it. To remain competitive, U.S. employers would have to replace low-skill, high-wage employees in assembly, telecommunication, and retail sales (for example) with computers, robots, or workers in developing countries who could perform comparable tasks for a small fraction of the pay received by workers in the United States.<sup>1</sup>

This fundamental shift toward globalization and automation meant that American students, more than ever before, needed a strong academic foundation that would allow them to acquire flexible, sophisticated technical skills and employability skills. Unfortunately, at the same time, many U.S. students were graduating from high schools with pitifully low achievement in math, science, and communication. The general track in America's high schools was being used for "social promotion" of students through dumbed-down academics and watered-down alternate graduation plans. Vocational education in high schools and in colleges had become a dumping ground where problem students and low achievers were being taught job skills. High school vocational courses were not considered integral to carefully planned, career-oriented programs of study and had little to do with the real demands of the workplace. It became apparent that three major changes were imperative:

1. All students must attain high academic goals.
2. The general track in high school must be eliminated; all students in high school must have well-defined plans of

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<sup>1</sup> This reality was documented in a report by the Commission on the Skills of the American Workforce entitled "America's Choice: High Skills or Low Wages!" (Rochester, New York: National Center on Education and the Economy, 1990).

study based on their goals after graduation (higher education and/or work).

3. “Dead-end” vocational courses and programs (in high schools and community colleges) must be replaced by preparatory programs based on an academic foundation and advanced skills for world-class careers.

Since the early 1980s, educators and employers have been working together to resolve this crisis in our schools. They began with 2+2 articulation, a process in which the curriculum of the last two years of high school is seamlessly connected to two years of study at a community college. This initiative, which brought together high school and community college faculties, helped to eliminate duplication of coursework and created incentives for students to continue their technical education after high school. However, students were still unprepared in academics, and community colleges were spending more and more effort and money to remediate entering students in mathematics and communication.

In his book *The Neglected Majority* (Washington, D.C.: Community College Press, 1985), Dale Parnell defined Tech Prep Associate Degree (TPAD) programs that combined 2+2 articulation with strong academics through contextual learning techniques and employer support. In 1990, when Congress reauthorized the Perkins vocational/technical legislation, a Tech Prep section was included that provided federal funds, administered through the states, to establish Tech Prep consortia (local partnerships of high schools, community colleges, businesses, and labor). The purposes of the consortia were:

- I. To develop articulation agreements for seamless high school-postsecondary programs that:
  - A. raised academic achievement in math, science, and communication skills and that;
  - B. prepared students for certificates or associate degrees through community and technical colleges or apprenticeship programs; and

- II. To address employer needs for workers with advanced skills, students should have employability skills such as:
  - A. working on a team, problem solving, and applying organizational skills;
  - B. applying job readiness skills;
  - C. demonstrating knowledge about the changing workplace;
  - D. learning about the rights and responsibilities of employees and employers;
  - E. developing a positive attitude toward work and learning; and
  - F. understanding the importance of responsibility, dependability, punctuality, integrity, and effort in the workplace.

In 1991, Dale Parnell and Dan Hull authored the book *Tech Prep Associate Degree: A Win/Win Experience* (Waco, Texas: CORD) in which they provide rationale, guidelines, structures, and processes for forming and operating TPAD programs. The authors strongly encouraged the use of contextual learning methodologies. For contextual, occupationally relevant teaching to form the basis of Tech Prep curricula, it was necessary to begin programs in the ninth and tenth grades—thus the conversion from a 2+2 program to a 4+2 program. In 1993, Congress amended the Perkins legislation to allow Tech Prep spending to begin in the ninth grade.

## MEETING THE NEED

The critical reports of the 1980s encouraged educators to examine existing programs and their results. At the same time employers were examining the new workforce requirements created by technology. This process of examination led to several basic conclusions about high school education in the United States:

- Fewer than 30 percent of all high school graduates earn baccalaureate degrees.
- Most good jobs require education and training beyond high school but not at the baccalaureate level.
- Most careers that pay salaries higher than minimum wage require strong academics and technical and/or career-oriented education beyond high school.
- The education system should be designed to prepare all students, not just a special few, for careers and education after high school.
- The traditional high school diploma will no longer prepare students for the workplace—new standards must be implemented into the curriculum.
- Most students learn more effectively when academics are taught in context.
- All high school students should choose and follow plans of study designed to prepare them for the next step after high school graduation (work and/or higher education).
- New 4+2 Tech Prep curricula must be designed to incorporate academic, skill, and employability standards.

The Tech Prep concept has addressed these identified needs and is gaining acceptance by educators, parents, students, and employers as a way of reenergizing the American education system.

## **THE BENEFITS**

The Tech Prep process has been found successful by many states for reforming their education systems. And, although Tech Prep is still evolving, it has proven to be an effective tool for improving education. It is the kind of education that motivates students to become involved in their own career preparation. By combining academic studies with development of skills that are relevant to the careers available in today's economy, Tech Prep encourages students to reach higher levels of achievement. It also helps them to develop the attitudes required to compete successfully in the world of work.

Support by business and industry for educational improvement has been increasing throughout the last three decades. This has resulted in the development of programs and materials designed to enhance the quality of education received by our young people, thus improving the workforce pool available to today's changing technological economy. Because businesses are interested in the "bottom line," they have also attempted to identify the benefits derived from various reform efforts.

## TECH PREP: A NEW WAY TO LEARN

Tech Prep was initiated in response to profound questions raised through research on intelligence and how people learn. The emergence of this research coincided with growing concern about the ineffectiveness of the American school system. After the Russian launching of Sputnik, much attention was focused on American students' lack of knowledge and skills. By the 1970s, new approaches to the delivery of education were beginning to receive attention. High schools, community colleges, and technical institutes began to articulate their programs to produce students who were well grounded academically and possessed strong technical and employability skills. This required changes in curricula and teaching methods.

It was at this time that a small group of reformers, including Dale Parnell of the American Association of Community and Junior Colleges and Gene Bottoms of the American Vocational Association, became involved in redesigning curricula for associate-degree technician programs in new and emerging technologies. A national strategy was formulated for promoting a 2+2 articulation program for technical education. Parnell's book *The Neglected Majority* emphasized the need to better equip the vast middle two quartiles of students for meaningful careers. It was out of this strategy and identified need that Tech Prep was initiated as an alternative to traditional college prep programs.

As originally conceived, Tech Prep was intended to give opportunity, direction, and meaning to students in the middle two quartiles by focusing on career objectives and a curriculum that would lead to further education and training after high school.

From 1985 to 1990, many successful Tech Prep programs were developed. North Carolina, South Carolina, Rhode Island, Virginia, Oklahoma, Texas, Florida, and Oregon all reported renewed student interest and improved achievement and retention in their schools. This success led to federal support

through the Carl D. Perkins Vocational and Applied Technology Education Act of 1990 (renewed in 1998).

Along with the introduction of articulation into high school and community college programs, there was a significant collaborative effort involving over thirty state agencies in conjunction with CORD and AIT (nonprofit curriculum developers). The result of this effort was an innovative movement in contextual teaching and learning. Research, curriculum development, and broad implementation of contextual instruction (in conjunction with teacher training) showed that nearly all students could be high academic achievers in math, science, and communication if teaching methods and content were adapted to match student learning styles. The contextual learning materials developed between 1984 and 1990 proved successful in physics, mathematics, biology, chemistry, and communication.

Tech Prep and the contextual learning movement merged in support of two goals:

- Providing a stronger preparation for middle-quartile high school students, and
- Facilitating interest and a sense of purpose in education by infusing vocational and technical applications into teaching strategies for academically focused courses.

Since this merger, the Tech Prep concept has continued to evolve and is receiving increasingly widespread attention as a basis for educational improvement. Tech Prep can work in any education system if the leaders provide proper planning and support for implementation. It can be a win-win situation for all students.

### ***A Changing Work Environment***

Successful implementation of Tech Prep must take into consideration the fundamental changes that have taken place, and continue to take place, in the American work environment. American society was founded on the “work ethic.” In times past,

most students were told by their parents and teachers to “finish school, get a good job, and support your family.” During the first 200 years of the United States, this was an adequate, attainable goal. American business and industry were world leaders, and jobs were plentiful. (The Great Depression of the 1930s was a temporary setback.) During the latter half of the twentieth century, technological advances transformed the economic landscape of America (and the world), leading to a reexamination of the American educational system.

New technology in the workplace required new high-tech skills based on the knowledge of mathematics, science, and communication. This demand for a skilled workforce revealed weaknesses in our schools. Because of changes, the workplace now requires employees who have a sound academic foundation and multiple skills and abilities.

Concurrent with growing recognition of the need for improved academic and technical coursework, employers were calling for “employability skills.” In 1993, Arnold Packer led the Secretary’s Commission on Achieving Necessary Skills (SCANS), a U.S. Department of Labor initiative that produced the report entitled “What Work Requires of Schools: A SCANS Report for America 2000.” This was the defining document that called for a third set of standards (in addition to academic and occupational skills) in critical thinking, using information, and technology (see following table).

### **Workplace Know-How**

COMPETENCIES. Effective workers can productively use:

- *Resources*: allocating time, money, materials, space, 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.

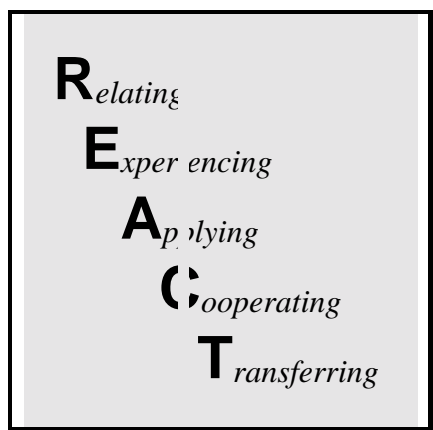
THE FOUNDATION. Competence requires:

- *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.

The adoption of the SCANS report as a structure for curriculum development and teaching can help students place knowledge and skills into a career context. This concept is an important component of any contextual teaching and learning model and should be used in designing a curriculum for any Tech Prep program.

## **Contextual Teaching**

Contextual teaching and learning are integral to an effective Tech Prep program. CORD has been a leader in the development of curriculum materials for contextual courses in mathematics and science. Two books available from CORD present the background and research that support the contextual approach to learning.<sup>2</sup> Both explain the REACT strategy, which uses five essential forms of learning.

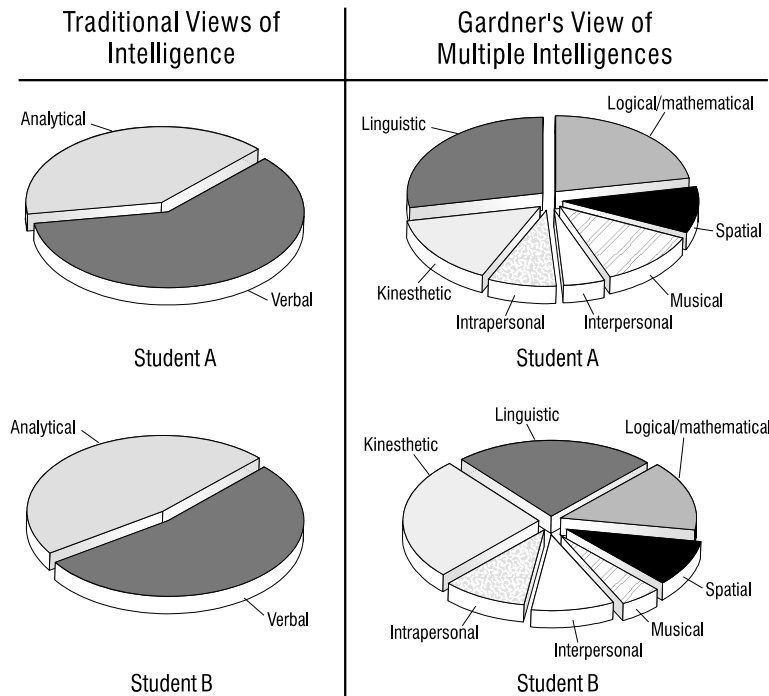


According to contextual learning theory, learning occurs only when students (learners) process new information or knowledge in such a way that it makes sense to them in their own frames of reference. The theory encourages educators to be attuned to the multiple aspects of learning environments and to choose and/or design learning environments that incorporate as many different forms of experience as possible. Research by Howard Gardner, professor of education at Harvard University, contends that there are multiple intelligences rather than only

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<sup>2</sup> *Teaching Mathematics Contextually: The Cornerstone of Tech Prep* and *Teaching Science Contextually: The Cornerstone of Tech Prep* (Waco, Texas: CORD, 1999). See also chapter 11 of Dan Hull and Julie Grevelle, *Tech Prep: The Next Generation* (Waco, Texas: CORD Communications, Inc., 1998).

verbal and analytical (the two recognized by traditional learning theorists).<sup>3</sup>



Gardner's theory has led to additional work on learning styles. For example, learning theorist David Kolb has observed that students tend to perceive information either abstractly (by conceptualizing and thinking) or concretely (by experiencing and feeling) and then process that information either actively (by experimenting and doing) or reflectively (by observing and watching) (see following figure).<sup>4</sup> Kolb further observes that almost all students can learn by and benefit from all four

<sup>3</sup> Howard Gardner, *Frames of Mind: The Theory of Multiple Intelligences* (New York: Basic Books, 1983).

<sup>4</sup> David Kolb, *Experience as the Source of Learning and Development* (Englewood Cliffs, New Jersey: Prentice-Hall, 1983).

experiences (thinking, feeling, doing, and watching). Kolb's research suggests that effective contextual teaching should be sensitive to the strengths of all students. Kolb's research also concludes that all people are extroverted learners: They learn best through interpersonal communication, group learning, sharing, mutual support, team processes, and positive reinforcement—all elements used in contextual teaching.



Tech Prep recognizes the need for a solid foundation in mathematics, science, technology, and communication to prepare for careers in the high-tech jobs available in business and industry. Tech Prep also recognizes the effectiveness of contextual teaching.

## ***Curriculum Improvement***

Tech Prep has evolved into a cooperative effort among community partners concerned about career preparation for all students. As local partnerships emerged among local schools, community colleges, and employers, the entities combined their efforts to develop curricula that would prepare students for careers in the local, state, and national economies. They realized that through such a synergistic effort desired results would emerge.

However, national leaders and curriculum specialists quickly recognized the need to better design academic and technical curricula in the high school and community college to integrate skills and concepts. The traditional coursework was too fragmented and out of date to meet current, let alone future, workforce needs. In addition, the provision of more advanced technical skills was necessary in postsecondary curricula. The release of the SCANS report further solidified the need to adjust teaching methodologies with more integrated curricula.

Through the October 1998 reauthorization of Tech Prep support in the Carl D. Perkins Vocational and Applied Technology Education Act, Tech Prep consortia throughout the country have been given the challenge of redefining Tech Prep for the next century. Efforts to change the face of this reform are under way at local, state, and national levels. One of the goals of the next generation of Tech Prep is to ensure that education for all students meets high standards. Achievement of this goal requires strengthening the academic and technical curriculum and revolutionizing teaching through innovations in educational technology.

Thus, much planning is required to ensure that all components are in place. Although each consortium must analyze its own needs and develop its curriculum accordingly, a basic structure and purpose can be used as a guide in your planning efforts (see figure, following page).

Outcomes	School-Based Learning	Work-Site Learning	
<ol style="list-style-type: none"> <li>1. Ready for Work and College</li> <li>2. Ready for Upward Career Mobility</li> <li>3. Ready for Retraining</li> </ol>	Technical Specialty <ul style="list-style-type: none"> <li>• <i>Advanced Skills</i></li> <li>• <i>Transferable Skills</i></li> </ul> Advanced Academics How to Learn	Technical Specialty <ul style="list-style-type: none"> <li>• <i>System Integration</i></li> <li>• <i>Problem-Solving</i></li> </ul> Team Skills	PS
<ol style="list-style-type: none"> <li>1. Ready for Work, Postsecondary, and College</li> <li>2. Choice of Specialization</li> <li>3. Ready for Advanced Skills</li> </ol>	Occupational Specific  Technical Core  Additional Academics	<ul style="list-style-type: none"> <li>• Interpersonal Skills</li> <li>• What Are Basic Tasks of Job in Career Field?</li> <li>• How Do Job Tasks Relate to Technical &amp; Academic Competencies?</li> <li>• Is This Really What I Want to Do? At What Level?</li> </ul>	Grades 11-12
<ol style="list-style-type: none"> <li>1. Ready for Basic Technical Skills</li> <li>2. Career Choice</li> <li>3. Attitude of a Desirable Worker</li> <li>4. College or Tech Prep?</li> </ol>	Math Science Communications Computers Social Sciences Career Exploration	The Climate of the Workplace Employer Expectations of Workers What Do I Want to Do?	Grades 9-10

**Structure and Purpose of a  
Tech Prep Curriculum**

## THE COUNSELOR'S ROLE IN TECH PREP

As the world races into the technology-driven information age, America's schools are experiencing a virtual transformation. So great are the changes taking place that education should no longer be left entirely to educators. Educators alone, acting independently of employers and community leaders, do not possess the knowledge and skills necessary to plan and implement an education system that can prepare all our students for the challenges that await them. Moreover, no *one* system can satisfy the educational needs of every community in the United States. America is a large and diverse country with widely differing conditions and situations.

Each educational institution must find the path that is appropriate for its own transformation. The search for that path requires leadership on the part of people who are known and trusted by students, teachers and administrators, parents, employers, and other members of the "educational community" (in the broadest sense). It is our contention that school counselors (with the support of their principals and others) can and should exercise this leadership in their communities.

Counseling is a critical component of any Tech Prep program because counselors bring unique skills and knowledge that are vital to the implementation of Tech Prep. Students need assistance and advocacy in defining their career interests and identifying their aptitudes and abilities. They need ongoing support in developing and pursuing their career goals, and they need to see a direct relationship between their education and the world of work.

Connecting students to the workplace through job shadowing, internships, apprenticeships, and work experience will encourage them to plan for their futures. Through the implementation of these strategies and others, counselors help students begin to see learning as a lifelong process that includes their high school education and advanced education or training.

Counselors should not think of themselves as “recruiters” but as sources of information about student options. It is the responsibility of counselors to keep students well informed on the variety of academic and career options available and the steps that should be taken to pursue those options.

### ***The Counselor’s Role in Promoting Self- and Career Awareness in Grades K–5***

Every student, beginning in kindergarten, should have experiences that promote awareness of the world of work and the student’s relationship to it. These experiences should assist the student in gaining an awareness of self and an understanding of the value of work. Work should be viewed as a means of becoming a self-sufficient, contributing member of society. In addition, these experiences should allow for the expression of the student’s talents and capabilities. Student competencies that should be developed in grades K–5 include the following:

- Acquiring knowledge of the importance of a positive self-concept to career development
- Developing skills for interacting with others in a multicultural environment
- Becoming aware of changing occupational roles for males and females
- Comprehending the significance of technology, tools, and materials in the world of work

These and similar competencies can be achieved through a comprehensive career development program facilitated by an elementary counselor working in cooperation with classroom teachers. Such a program helps students understand the role of work, their own uniqueness, and different occupations. The school counselor and classroom teachers work together to introduce the concepts of school as work and students as workers. Work values developed early in school are the foundation that the students will carry to the workplace.

Parent career days or class visitors can expand a child's understanding of the world or work. The counselor usually acts as a career resource to the teacher but may also work directly with students in providing career information and guidance. Career education should be infused into regular curricula.

### ***The Counselor's Role in Encouraging Career Exploration in Grades 6–8***

The middle school/junior high counselor can provide a general orientation to occupational clusters as the first step in the process of focusing on career goals. Students who have identified their likes, dislikes, aptitudes, and interests are able to begin the task of determining how the education and work requirements of each occupational cluster relate to their personal situations. By exploring career and educational options, middle school/junior high students are better prepared to develop tentative career and educational plans for high school. In grades 6–8, the following student competencies should be developed:

- Relating educational achievement to career opportunities
- Learning to integrate academic and vocational course content in a real-world context
- Identifying types of work performed across a broad range of occupations
- Understanding the attitudes necessary for success in work and learning

Middle school/junior high is when students begin to explore real work-related experiences. Counselors should work closely with teachers in developing educational structures that provide opportunities to integrate career development into academic curricula. Sometimes this is best accomplished by working with teams of teachers representing a broad range of academic subjects. Advisor/advisee programs offer excellent opportunities for exploration of careers in small group discussions. Visits to job sites are also valuable in this respect, as they can bring

reality back to the classroom and show students how academic concepts are applied in the world of work.

Many strategies for infusing work-based experiences into the classroom are available. Whatever strategies are pursued, the counselor should assist teachers in developing curricula that support career exploration and in implementing career exploration activities.

### ***The Counselor's Role in Assisting Students in Career Preparation in Grades 9–12***

The early high school grades should include frequent activities that encourage exploration of career choices. This exploration helps students who become involved in Tech Prep during their junior and senior years because, to do so, they should plan for that involvement when they are in the ninth and tenth grades. High school students are best able to make informed educational decisions when they participate in career development activities that build on their participation in similar activities in middle school/junior high. At the high school level, career development should begin to focus on individuals; information provided to groups of students should be supplemented with individual planning sessions with the school counselor. Computerized career information databases can help students deal with the voluminous educational and career information that is available.

Employability skills, job-finding skills, job-keeping skills, resume writing, interviewing, skills analysis, and team problem solving are some of the basic skills young people will need in the workplace and/or in preparing to enter to the workplace. Student competencies that should be cultivated during high school include the following:

- Making decisions and choosing alternatives in planning and pursuing educational and career goals
- Researching, evaluating, and interpreting information about career opportunities

- Learning to integrate academic and vocational course content in a real-world context
- Exhibiting positive attitudes toward work and learning

### ***Counselors and Parents***

Regardless of the roles played by educators, parents have the greatest influence on young people regarding their career decision making. Counselors should keep this fact in mind as they plan guidance programs for high school students.<sup>5</sup> Tech Prep is a partnership in which parents are essential stakeholders. Counselors must help parents see the importance of their participation in this partnership.

Just as students need career-related information to choose their career paths wisely, parents need information to help students make those choices. To participate in Tech Prep, students must choose career paths to follow during the last two years of high school and two years of advanced training at community colleges, at technical institutes, or in apprenticeship programs. These choices do not represent one-time-only decisions—students are free to change their minds. But they are important choices in which, through the encouragement of counselors, parents should be involved. Counselors should be diligent in making career information available to both students and parents and helping them to interpret the information in relation to the students' interests, skills, and talents.

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<sup>5</sup> Counselors should also keep in mind the fact that the older the student, the more difficult it is to get parents involved. Involving the parents of elementary school children is typically no problem, and even at the middle school level, parents are still willing to participate in back-to-school nights and other activities. However, there is a major drop-off in the number of parents involved in their children's school activities at the high school level. This is unfortunate because early high school is a critical time in career planning and consequently a time when the need for parental involvement is great.

In working with parents, counselors often must deal with misperceptions. For instance, most American parents believe their children need baccalaureate degrees to succeed. Yet in today's workplace technical skills are in greater demand than baccalaureate degrees.<sup>6</sup> At present, only 20 percent of the jobs in the United States require baccalaureate degrees, while, because of the recent infusion of technology into the workplace, 65 percent require technical skills. (Even lower-level jobs now require some technology-related skills.) Given these facts, Tech Prep is ideally suited for many students, since it leads to the acquisition of technical skills through informed career exploration and a strong academic foundation in math, science, technology, and communication. Yet parents often are not fully cognizant of these facts or do not fully accept them. Counselors must present these facts to parents and help them comprehend and accept them as the trend of the future.

Counselors are also responsible for helping parents (and students) understand the importance of career choices made in high school while, at the same time, emphasizing that those choices do not have to be, and probably will not be, lifetime choices. As students progress through the program, new experiences often suggest altered or new directions. Parents and students alike should be brought to the realization that the value of making informed career choices in high school is that it encourages young people to begin to develop their personal views on occupations and allows them to make more informed decisions later.

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<sup>6</sup> For more on the need-to-attend-college myth, see Kenneth C. Gray and Edwin L. Herr, *Other Ways to Win: Creating Alternatives for High School Graduates* (Safe Publications Company, 1997). Gray and Herr explore this myth, the reasons it is still so prevalent, and the failures that many young people have experienced as a result of it. The authors then present a three-step process for working with students and parents to help them recognize other ways to win in the American economic system. They present a plan for systematic career guidance for students and structured feedback for parents.

Counselors should plan activities (e.g., career fairs and seminars) designed to get parents interested and involved and to make students aware of their options. Counselors should also look for opportunities for discussion with parents. One tool that can be used as a point of discussion between counselors and parents (in conjunction with their students) is the student portfolio. Many schools have begun using individual student portfolios to document students' experiences and achievements. Portfolios begun in the ninth grade and maintained throughout the high school years are extremely valuable records of the students' education and skill training experiences. Periodic review of the portfolio provides counselors, parents, and students a focal point for productive discussion of the students' progress and career preparation.

To be able to work with students and parents in career decision making, counselors must be knowledgeable about available choices. Since Tech Prep prepares students for career fields or clusters, counselors should constantly update their knowledge of local, state, and national labor market information so that they can share it with students and parents who are exploring occupational choices. Having up-to-date labor market information will also help counselors see how employment trends may affect the Tech Prep curriculum and the choices that are available to students for further training. In short, the better informed counselors are about job trends, the more effective they can be in helping students (with the informed assistance of their parents) set and pursue career goals.

Students, parents, and counselors make up the core constituents in any successful Tech Prep program.

### ***Counselors and Tech Prep Curricula***

Because it is based on contextual teaching and learning and a sequencing of courses that differs from most traditional programs of study, Tech Prep requires major curriculum reform. To be effective in promoting and influencing the reform process, counselors should serve on local Tech Prep councils and

committees to stay informed of local and statewide initiatives. They should be not observers only but proactive participants, voicing their concerns on issues that affect the learning, personal and social, and career needs of students. It is also essential that counselors be aware of the content of the courses taught in their programs to ensure that the content is not “watered down” but academically rigorous. A strong academic program is basic to Tech Prep. To advise students effectively, counselors must also be thoroughly familiar with articulation agreements among participating institutions. This requires, among other things, an understanding of the sequencing of courses between secondary and postsecondary institutions and dual-credit possibilities.

### ***Counselors and Tech Prep Partnerships***

Counselors in Tech Prep program must be active in building and maintaining partnerships involving stakeholders at every level. For instance, since Tech Prep is intended to bridge the traditional divisions between academic and vocational disciplines, a major focus in Tech Prep is the development of partnerships between academic and vocational teachers. Bringing into being partnerships in which academic and vocational educators can work well together requires that counselors be effective as change agents. This calls for strong communication and negotiation skills and the ability to encourage a positive approach to new challenges.

An effective Tech Prep program also involves partnerships with entities outside the school, particularly local business and industry leaders. If counselors do not have the support of their business communities, they cannot provide students the opportunities they need. Consequently, counselors’ ability to involve people outside the school system is critical.

### ***Counselors As Leaders***

Research has shown that every new project requires strong, knowledgeable, dedicated leadership at each phase—exploring, planning, implementing, evaluating, revising, and maintaining.

Without leadership at every step along the way, interest will lag and achievement will be less than expected.

Because Tech Prep is a dynamic initiative, strong, enthusiastic leadership on the part of counselors is essential to the fulfillment of Tech Prep's goals. To provide this leadership, counselors must stay informed about job trends and new developments in Tech Prep and assist teachers and others in their professional development. By staying at the forefront of their programs, counselors can fulfill their leadership potential.

Effective counselors share a number of leadership skills:

- They know when to encourage, support, or get out of the way.
- They exhibit enthusiasm, energy, and a positive attitude.
- They are sensitive to the needs of others.
- They inspire trust.
- They know how to introduce new ideas.
- They are able to establish and maintain relationships with people outside the school system (e.g., employers and representatives of government agencies).
- They know their schools' programs thoroughly.
- They work well within diverse groups and are able to lead others in the appreciation of diversity.

These skills are essential for a Tech Prep counselor, particularly as Tech Prep is a dynamic program. A counselor who accepts a leadership role in a Tech Prep program should realize that it is a challenging position. It requires determination, preparation, and professional development to gain acceptance of Tech Prep.

### ***Counselors and Principals***

To be successful in implementing and maintaining Tech Prep programs, counselors need the support of their principals. Principals are already regarded as leaders within their schools.

They control most of the decision making, and they are ultimately responsible for the success or failure of their schools. Since students, staff members, parents, and others naturally look to principals for direction, principals are ideally positioned to be the leaders of their school communities. Consequently, counselors should make every effort to gain their principals' acceptance and ongoing support of Tech Prep and to ensure that their principals understand the importance of their roles.

In putting together their leadership teams, principals should be made aware of the importance of securing the participation of business and industry leaders. They should get to know the leaders in their business communities through participation in community organizations such as chambers of commerce, civic clubs, and the National Alliance of Business. These organizations provide opportunities to make valuable contacts and often supply key members of Tech Prep consortium boards of directors. (Teacher union officials should also be considered for board membership.)

One major objective of every principal's recruiting efforts should be to convey accurate information about the Tech Prep concept and process. To meet this objective, they should become thoroughly familiar with Tech Prep and support their presentations with printed materials such as this book. (The following section describes some excellent printed materials; see also the "Other Resources" and "Supporting Organizations" sections.)

## ORGANIZING FOR TECH PREP—KEY RESOURCES

Because Tech Prep involves partnerships, a new process of teaching and learning, and curriculum restructuring, initiating a Tech Prep program calls for profound changes that, in turn, require effective leadership on the part of principals and counselors. If you are considering adopting Tech Prep in your school, we urge you to become familiar with the resources described in this section. They will help you become an effective leader of the Tech Prep movement in your community.<sup>7</sup>

### **Dan Hull and Dale Parnell, *Tech Prep Associate Degree: A Win/Win Experience* (Waco, Texas: CORD, 1991)**

Hull and Parnell's pioneering work on the Tech Prep Associate Degree (TPAD) provides a rationale, guidelines, structures, and processes for developing a TPAD program. Hull and Parnell recommend expanding articulation from 2+2 to 4+2 (i.e., by including all four years of high school); their recommendation was endorsed by Congress in the 1993 Perkins legislation. The book also makes a strong case for laying a foundation based on contextual learning, presents guidelines for forming the partnerships necessary to support a Tech Prep program, discusses strategies for overcoming obstacles to implementation of Tech Prep, offers suggestions for recruiting and retaining students, and relates a number of success stories.

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<sup>7</sup> All CORD publications are available from CORD Communications, Inc., 800-231-3015.

**Secretary's Commission on Achieving Necessary Skills (SCANS), *What Work Requires of Schools: A SCANS Report for America 2000* (Washington, D.C.: Government Printing Office, 1992)**

Concurrent with growing recognition of the need for improved academic and technical coursework, employers have increasingly called for “employability skills.” The SCANS report identifies two categories of skills other than basic competencies such as reading, writing, and arithmetic: personal qualities and thinking skills. The first includes the ability to relate to others in and out of the classroom as well as to develop individual responsibility and self-esteem. The second includes the ability to think and solve problems in an entire system, rather than working on isolated tasks and problems.

The SCANS report is a useful document for new Tech Prep practitioners to have because it represents the collective voice of many employers in expressing frustration with the current system's inability to produce graduates who know how to use information, think critically, solve problems, work cooperatively with other people on teams, and learn on their own—in short, to produce graduates who satisfy the demands of today's workplace.

**Julie Grevelle, *The ABCs of Tech Prep* (Waco, Texas: CORD, 1999)**

Tech Prep has continued to be funded through the Perkins legislation, and local consortia continue to redefine Tech Prep for the next century. One of the goals for this next generation is to ensure that education for all students is equal to that previously reserved for only the college prep students. To assist in this effort, Julie Grevelle has written a succinct guide for people interested in using the Tech Prep concept as a basis for reforming their education programs.

*The ABCs of Tech Prep* is especially useful to those in leadership roles such as principals and school counselors. One issue that receives special attention in the book is the obstacles to implementing Tech Prep programs. In this section, Grevelle

points out the misinformation that most parents have about vocational and technical education. The facts 65 percent of all jobs now require high skills and that Tech Prep emphasizes high academic standards as well as skill standards make Tech Prep a strong program. However, a comprehensive guidance program is necessary to ensure that parents and students understand the academic emphasis of Tech Prep. As Grevelle points out, making Tech Prep part of a total school curriculum requires the leadership of a knowledgeable and dedicated counselor supported by an enlightened principal.

Grevelle's book also discusses the role of guidance in Tech Prep programs, provides funding strategies, and offers valuable suggestions for designing and implementing professional development.

**American School Counselor Association (ASCA), *Sharing the Vision: The National School Counseling Standards for School Counseling Programs (1997)* (Available from ASCA Publications, Box 960, Herndon, VA 20172-0960)**

The American School Counselor Association has taken a proactive position to define high but attainable expectations for students through the development of the National Standards for School Counseling Programs. The National Standards create a comprehensive set of measurable competencies for all students to achieve as they participate in school counseling programs.

The document includes the student competencies that reflect the input and thinking of school counselors across the nation. The competencies were adapted from state, district, and building school counseling models and were field-tested with thousands of practicing school counselors at national, state, and local conferences. In addition, the competencies reflect the existing body of research that speaks to the outcomes of school counseling programs for all students.

**National Association of Secondary School Principals  
(NASSP), *Breaking Ranks: Changing an American Institution*  
(1996) (Available from NASSP, 1904 Association Dr.,  
Reston, Virginia 22091)**

NASSP's 1996 report centers on the need for high schools to recognize the importance of career preparation for all students. As the report states,

[p]owerful transformation in values and behavior, in expectations and rewards, and even in the family itself renders it essential that the high school reevaluate its purpose and functions, just as the society around it struggles to come to terms with the ramifications of these same changes. . . . High schools must make it part of their mission to help young people understand that life without the intellectual tools for fully participating in the marketplace constitutes a sentence to likely destitution.

The report is organized around nine purposes for the nation's high schools. Four of these nine are directly addressed in a comprehensive Tech Prep program:

- I. High school must function as a transitional experience, getting each student ready for the next stage of life, whatever it may be for that individual, with the understanding that ultimately, each person needs to earn a living.
- II. High school must be a gateway to multiple options.
- III. High school must prepare each student to be a lifelong learner.
- IV. High school must lay a foundation for students to be able to participate in an increasingly technological society.

These four purposes align with the definitions of Tech Prep given by Parnell—an associate degree program that combines 2+2 articulation with strong academics through occupationally relevant learning techniques. The Perkins legislation also defines Tech Prep as a program that "(V.) leads to an associate or baccalaureate degree or a post-secondary certificate in a

specific career field; and (VI.) leads to placement in appropriate employment or further education.”

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Each of these sources stresses the importance of career preparation and the necessity for effective career guidance throughout a Tech Prep program. An enlightened principal and a knowledgeable counselor can form a dynamic leadership team.

This is not an undertaking that should be entered into lightly. It will require a great deal of preparation by the leaders. You will need to do enough reading to have a good grasp of the concept and all the components that go into an effective Tech Prep program. The references and recommended resources described in this booklet will provide excellent readings for your preparation. When you feel you have a grasp of the concept, you may want to invite your colleagues to read the material you consider appropriate or pertinent to your situation. You may also want to share materials with influential parents and employers who are interested in reforming the education program in your community.

If you already have a Tech Prep program, you may want to review the recommended resources. Remember that Tech Prep is a dynamic, evolving program. Your program should be evaluated and reviewed annually for possible revision to meet new needs or to strengthen specific areas. Among the recommended resources, you will find tools and assistance for that procedure also.

One last observation to school administrators who aspire to Tech Prep leadership roles. Leadership requires trust from those who are being led. That trust is earned by being knowledgeable, reliable, and responsible. Personal, face-to-face contact is one of the most effective ways to develop acceptance by others. Thus, to be successful in their support of Tech Prep, counselors and principals must be active not only among the faculty and staff, but also in community groups.

## OTHER RESOURCES

This booklet is not intended primarily as a “how-to” book. Its purpose is to convince you that reform is needed in most schools and that Tech Prep can transform your school into an effective institution that serves your community. This can be accomplished only through a coordinated effort that involves a majority of the stakeholders in a cooperative effort to establish the Tech Prep consortium.

Coordination of this effort requires informed leadership on the part of principals and counselors. This section describes additional resources and supporting organizations that can assist you in becoming informed and informing your colleagues about the Tech Prep concept and its benefits.

### **CORD**

CORD’s CEO Dan Hull had an extensive career as a registered professional engineer before becoming involved in curriculum and instructional development for community colleges that were gearing up to train technicians in the evolving technological age. In 1979, he became president of CORD, and he has emerged as a leader in the Tech Prep movement. Hull has authored several books about Tech Prep, and CORD and has also published several books by other authors.

Hull’s *Opening Minds, Opening Doors: The Rebirth of American Education* (Waco, Texas: CORD, 1995) provides fundamental information about Tech Prep and its theoretical underpinnings. The book includes information on Tech Prep curricula, contextual learning, business and education partnerships, and worksite learning.

Contextual learning is the focus of two other recent CORD publications, *Teaching Mathematics Contextually: The Cornerstone of Tech Prep* and *Teaching Science Contextually: The Cornerstone of Tech Prep* (both 1999). Both books provide the research-based background for contextual learning, explain

the REACT strategy (*Relating–Experiencing–Applying–Cooperating–Tranferring*), and illustrate contextual learning materials that support the REACT strategy.

Two recent CORD publications look to the future of Tech Prep: Dan Hull and Julie Grevelle, *Tech Prep: The Next Generation* (1998) (with a foreword by Dale Parnell), and its companion work by Debra Mills, *Tech Prep: The Next Generation Planning Guide*. Hull and Grevelle have brought together the talents of numerous authorities on Tech Prep and school-to-work issues, including Arnold Packer, who served as executive director of the U.S. Labor Department Secretary’s Commission on Achieving Necessary Skills (SCANS), and Gene Bottoms, senior vice president of the Southern Regional Education Board (SREB). Hull and Grevelle and their collaborators explore broad issues related to curriculum, teaching strategies, employer support, and family and community support. The planning guide gives step-by-step advice on implementing a Tech Prep program and provides numerous worksheets designed to help the new practitioner gather information and work through difficulties systematically.

CORD also provides many other services and products to assist you in producing excellence in your education program. To find out more about these, contact CORD Communications and request their educational resources catalog (800-231-3015).

### ***Supporting Organizations***

Anyone interested in knowing more about Tech Prep should be aware of state and national organizations that provide products and services that support the improvement of education. Some that have made significant reform efforts are listed below. In some cases, specific projects are listed as being important to anyone involved in a Tech Prep program. However, each organization can be contacted for additional information regarding its activities or available products.

## *Private Associations*

American School Counselor Association (ASCA), produces an excellent research journal, *Professional School Counseling*. Among articles of interest to new Tech Prep practitioners are “Counselor-Led Staff Development: An Efficient Approach to Teacher Consultation” (October 1997) and “The Impact of an Intervention on Career Decision-Making Self-Efficacy and Career Indecision” (June 1999). Other publications and services are also available from ASCA (801 N. Fairfax Street, Suite 310, Alexandria, VA 22314; 800-306-4722).

In addition to the publication already cited, the National Association of Secondary School Principals (NASSP) produces an excellent monthly bulletin (1904 Association Drive, Reston, VA 22091).

The National Tech Prep Network’s (NTPN) monthly newsletter, *Connections*, provides up-to-date information about best practices throughout the nation and the latest products available for supporting your Tech Prep program. Contact Teresa Rollins, NTPN, PO Box 21689, Waco, TX 76702; 800-518-1410.

The National Association for Tech Prep Leadership (NATPL) supports research and publication and conducts an annual national conference for professional development. Two publications in February 1999 exemplify NATPL’s focus: “Measuring Tech Prep Excellence” and “Tech Prep Program Quality Indicators.” Contact NATPL, Arizona Community College System, 3225 Central Avenue, Suite 1220, Phoenix, AZ 85012.

The American Association of Community Colleges (AACC) is a key organization in the Tech Prep movement. Among its numerous other projects, AACC bestows the annual Parnell Tech Prep Award to outstanding local programs. Contact AACC, One Dupont Circle, NW, Suite 410, Washington, DC 20036-1176; 202-833-2467.

## *Federal and State Agencies*

The U.S. Departments of Education and Labor have several offices and agencies that support the school-to-career movement:

- National Center for Research in Vocational Education, NCRVE, University of California Berkeley, Suite 500, 2030 Addison Street #1674, Berkeley, CA 94720-1674; 800-762-4093. <http://ncrve.berkeley.edu>
- National Occupational Information Coordinating Committee (NOICC), 2100 M Street NW, Washington, DC 20037; 202-653-2123. <http://www.noicc.gov>
- National School-to-Work Information and Learning Center, 400 Virginia Avenue SW, Room 150, Washington, DC 20024; 800-251-7236. <http://www.stw.ed.gov>
- ERIC Clearinghouse on Counseling and Student Services, School of Education, University of North Carolina at Greensboro, 201 Ferguson Building UNCG, Greensboro, NC 27402; 800-414-9769, 336-334-4114. <http://www.uncg.edu/edu/ericcass> (Edwin Herr's *Counseling Employment Bound Youth* (1995) is especially recommended.)
- State Occupational Coordinating Committee (SOICC). Check with your state department of labor; your SOICC can be especially valuable as a resource for labor market information, which is useful in career counseling.
- State Tech Prep coordinator. Contact your state department of education or community college division.

Many local Tech Prep consortia operate successful programs. Each has a coordinator or director who will share information with you about the program. Another way of networking is to attend a national conference or state or regional workshop or institute. For information about these opportunities, contact your state Tech Prep coordinator or call CORD, 800-972-2766.