

Tech Prep Module for Texas Career and Technical Education Administrators

This module is designed to provide career and technical education administrator's information about Tech Prep programs and to help them establish programs in their school district or institution.

Guiding Questions:

- I. What is a Tech Prep program?**
- II. What are the benefits and outcomes of Tech Prep programs?**
- III. What policies authorize Tech Prep in Texas?**
- IV. How does a school implement a Tech Prep program?**
- V. What assessment strategies are needed to determine the impact of a Tech Prep program?**
- VI. What are the barriers and challenges to Tech Prep programs?**
- VII. Where are additional resources located?**

I. What is a Tech Prep program?

Tech Prep education integrates academic and career and technical instruction in a planned sequence of study in a technical field. The sequence may begin as early as the freshman year in high school and extends from high school through at least two years of postsecondary technical education or an apprenticeship program (U.S. Department of Education, 2005). The number of years students may take courses in high school followed by 2 years in a postsecondary program are referred to as 2+2, 3+2, or 4+2. While the program can end with a community college/junior college associate degree or certificate, students may also transfer to 4-year colleges or universities to continue their education (Brown, 2001). These programs lead to placement in appropriate employment or further education (D'Amico, 2002).

To receive state and federal funding, Tech Prep programs are required to be a collaborative effort, organized through an area consortium of

secondary and postsecondary educators working with business and industry representatives. Texas has 26 Tech Prep consortia. (For more information about consortia, see “[How does a school implement a Tech Prep program?](http://cte.unt.edu/home/admin.html)” on this website – <http://cte.unt.edu/home/admin.html>.)

The U. S. Department of Education (2004) notes, “. . . to date, roughly 47% of the nation's high schools (or 7,400 high schools) offer one or more Tech Prep programs. Nearly every community and technical college in the nation participates in a Tech Prep consortium, as do many four-year colleges and universities, private businesses, and employer and union organizations.” (p.1)



Tech Prep programs offer students technical education in a career field such as engineering technology; applied science; applied economics; agriculture; health occupations; a mechanical, industrial, or practical art or trade; or business (D’Amico, 2002).

Texas Tech Prep Data

According to the Texas Higher Education Coordinating Board’s Tech Prep Statewide Data Report for 2006-2007 (THECB, 2007), they approve fifty-four percent of the state’s 1,967 Associate of Applied Science (AAS) degree programs in community and technical colleges as Tech Prep programs. The same report noted that of those degrees, 157 were Business, Management, Administration (20.2%), 133 are Health Science (17.1%), 108 were Information Technology (13.9%), and 98 were Manufacturing (12.6%).

Texas Two-Step Projects

Texas also offers technical students the *Texas Two-Step* program (Technology **W**orkforce **O**pportunities through **S**eamless **T**ransitions and **E**ducational **P**artnerships), which allows Tech Prep students a seamless transition to the community college (step 1) and from there, to a 4-year college or university (step 2) (Tech Prep Texas, n. d.). Not all Tech Prep

programs are designed to continue through the 4-year college/university, but many can be adjusted to do so.

Difference between Career Clusters and Tech Prep

Career clusters are groupings of occupations such as health science, finance, information technology, hospitality and tourism, and others. According to the States Career Cluster Initiative (n. d.), clusters include academic and technical skills that allow students to prepare for a full range of positions from entry level jobs through management and professional levels. Texas has adopted the sixteen nationally recognized career clusters and districts that accept Perkins IV funds must use the clusters, which are equivalents of the *Programs of Study* that Perkins requires (Achieve Texas, n. d.).

Students may complete a career cluster in high school or through any number of education options, including the full range of postsecondary education. Tech Prep programs differ in that they identify an organized coherent sequence of courses that connect secondary schools with two- and four-year college programs. Tech Prep may organize their programs through career clusters.

Earn College Credit in High School

The Tech Prep Texas Website (n. d.) indicates that students in Tech Prep programs can earn college credit through:

- Courses articulated between high schools and postsecondary institutions (Texas has statewide articulation and local articulation programs);
- Dual credit; and/or
- Advanced Placement (AP) courses from the College Board.

Articulated Programs

A program articulation agreement is a document that enumerates specific responsibilities of the secondary school, the postsecondary institution, and the student. It must be approved by the governing boards of both the school and postsecondary institution. The agreement includes an outline

of a Recommended High School Graduation Plan¹ and a two-year degree, certificate, or apprenticeship program plan (Tech Prep Texas Website, n.d.). Texas has a number of approved state and local articulation agreements. State articulation agreements include strict criteria for schools and colleges to recognize articulated courses and award college credit. There are also guidelines for local educators to establish articulation agreements of courses not articulated through statewide agreements.

Articulated high school courses must be the same quality and rigor of the equivalent course offered at the postsecondary institution. High school students must meet requirements outlined in the course articulation agreement, either through the Statewide Articulation Program or in a local articulation agreement.

Dual Credit Programs

Dual credit programs allow high school students to enroll in college courses and simultaneously earn academic credit from the college and the high school. Such courses are most often taught on the secondary school campus but high school students may also take dual credit courses on the college campus. The high school and/or school district administrators develop dual credit programs with local institutions of higher education (most often community colleges) in collaboration with the local Tech Prep Consortium.

More information on dual credit programs is available at on this website at <http://cte.unt.edu/home/admin.html>

AP Programs

The College Board's Advanced Placement Program (AP) offers high schools 37 college-level courses in 22 subject areas that allow students to earn college credit while in high school (College Board, 2008). The AP program provides materials and other information to the school, including guidelines for teaching and administering AP Exams. Educators may include appropriate AP classes in their identified sequence of courses.

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For more information about AP programs, click on <http://www.collegeboard.com/student/testing/ap/about.html>

¹ Information on the Recommended High School Graduation Plan is located at <http://www.tea.state.tx.us/gted/AdvPro.html>

For more information about Tech Prep in Texas, click on <http://www.techpreptexas.org/index.shtml>

II. What are the benefits and outcomes of Tech Prep programs?

Tech Prep programs are designed to provide technical preparation in a career field and build student competence in math, science, reading, writing, communications, economics, and workplace skills (U.S. Department of Education, 2005). Tech Prep allows students to



- Start a college technical major in high school and continue in a community or technical college, terminating in a certificate or associate degree in a career field.
- Continue into a 4-year college or university program in their field of study; and
- Get an entry-level job in their technical skill area while attending college.

Outcomes Identified in Texas

The Quick Facts - Statewide Statistics section of the Tech Prep Texas Website (n.d.) lists the following benefits to students in Texas:

- Tech Prep high school students in grades 10-12 have had lower annual dropout rates for eleven years (94-95 to 04-05) than those students who did not participate in Tech Prep programs.
Texas Education Agency, PEIMS
- Tech Prep program participants have had higher average grade 12 graduation rates for twelve years (94-95 to 05-06) than those

students who did not participate in Tech Prep programs. Texas Education Agency, PEIMS

- About 55% of high school graduates who participated in Tech Prep programs entered two-year public colleges or universities in Texas the summer or fall after high school graduation; almost 67% entered within two years. These rates are higher than those for students who did not participate in Tech Prep programs. Students graduating in 2003; Texas Higher Education Coordinating Board, master enrollment files, and Texas Education Agency, PEIMS
- There were 53,386 senior Tech Prep students in 2006-2007 in the state of Texas. There were \$36 million in potential equivalent tuition and fees saved by Tech Prep students in Texas and \$34 million in potential contact hour reimbursement saved by the state of Texas totaling a potential savings of \$70 million for the people of the state of Texas. Texas Education Agency, PEIMS, October 2006; Texas Higher Education Coordinating Board, THECB Financial Index FY 06 - FY 07 (Tech Prep Texas, ¶3-¶7)

III. What policies authorize Tech Prep in Texas?

Tech Prep programs have been in place in Texas since the early 1990's. Programs were initially funded by the 1990 Carl D. Perkins Vocational and Applied Technology Education Act (Perkins Act). Perkins funding has continued through reauthorizations in 1998 and 2006². In addition, the School-to-Work Opportunities Act of 1994 further strengthened Tech Prep programs (Brown, 2001). In Texas, the state legislature passed Tech Prep legislation in 1999 (Texas Legislative Code: Chapter 61. Subchapter T).

² In 2006, the name of the act was changed to reflect newer terminology (Career and Technical Education rather than Vocational Education). The 2006 act is named the Carl D. Perkins Career and Technology Education Improvement Act, P.L. 109-270.

Texas Tech Prep Consortia

According to the Perkins Act (2006), funding for Tech Prep programs in all states must be administered through consortia approved by the state education governing agency. In Texas, the Texas Higher Education Coordinating Board (THECB) works with the Texas Education Agency (TEA) to provide oversight of the state's Tech Prep initiatives.

As mentioned earlier, Texas has 26 Tech Prep consortia. Each consortium is a collaborative effort of education institutions that works with business and industry in the area. Tech Prep consortia are responsible for creating long-term strategic plans for Tech Prep programs in their area; overseeing consortium activities, budget expenditures; coordinating Tech Prep program development and related services among school districts and colleges; making information available to students in the area; providing staff development activities to improve articulation, curriculum alignment, contextual teaching and learning; and implementing policies to ensure public schools, two-year colleges, and universities in their consortia service area have the opportunity to have Tech Prep programs (Tech Prep Texas, n. d.).

For more information about Tech Prep consortia, see “[How does a school implement a Tech Prep program?](http://cte.unt.edu/home/admin.html)” on this website <http://cte.unt.edu/home/admin.html>.

IV. How does a school implement a Tech Prep program?

Tech Prep programs are well established in Texas. According to the Quick Facts - Statewide Statistics section of the Tech Prep Texas Website (n.d.), about 79% (821) of the state's public school districts with high schools have one or more Tech Prep program agreements with one or more Texas colleges. Programs are developed jointly by secondary schools and postsecondary institutions in collaboration with business and industry and must be approved by the Texas Higher Education Coordinating Board (THECB).

Contact the Local Tech Prep Consortium Director

To implement a program, school officials must contact the Tech Prep Consortium director in the geographic area of their school. Consortia are in place to assist schools in the development and submission of Tech Prep programs for state approval, help schools and colleges provide information to students, provide staff of secondary schools and postsecondary institutions development activities that include curriculum

alignment and articulation and contextual teaching and learning, and may provide funds to support the development of Tech Prep programs and related activities (Tech Prep Texas, n. d.).

The Tech Prep Texas Website has a listing of the 26 consortia with links to each consortium, including names and contact information of the director and other pertinent data. You can find this information at <http://www.techpreptexas.org/consortia/>.

The following are the 26 Texas consortia:

Alamo	North Central Texas
Brazos Valley	North Texas
Capital Area	Panhandle
Central Texas	Permian Basin
Coastal Bend	South Plains
Concho Valley	South Texas
Deep East Texas	Southeast Texas
East Texas	STAR Middle Rio
Global Edge	Texoma
Golden Crescent	Upper East Texas
Gulf Coast	Upper Rio Grande
Heart of Texas	Weatherford Area
Lower Rio Grande	West Central Texas

V. What assessment strategies are needed to determine the impact of a Tech Prep program?

Assessment is a major feature of Tech Prep programs in Texas. Secondary and postsecondary institutions with Tech Prep programs are required to provide the TEA³ and THECB⁴ data on Tech-Prep student enrollments and student success. The Texas Higher Education Coordinating Board (THECB) (2007) evaluates each Tech Prep consortium biennially and follows-up with a written report stating any problem.

Furthermore, THECB (2001) requires Tech-Prep implementation consortia to establish benchmarks for programs success and have an annual

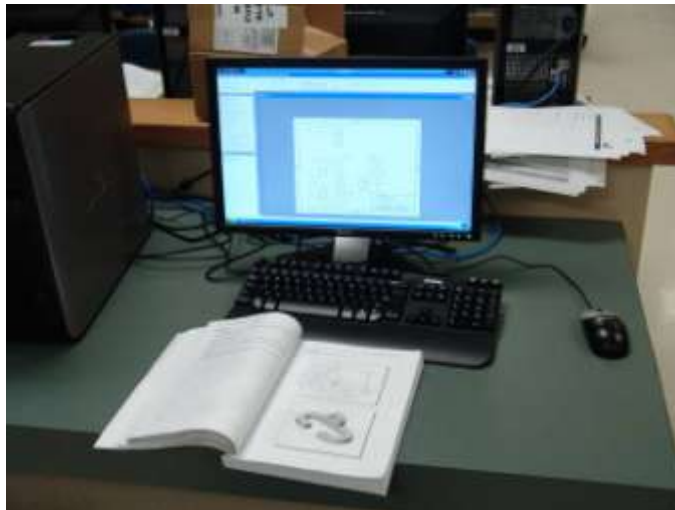
³ The TEA utilizes the Public Education Information Management System (PEIMS) reporting system.

⁴ Community and technical colleges report data on Tech Prep students through the CBM-001 Report.

evaluation process to determine if benchmarks have been achieved. Consortia must also participate in on-site, peer-review evaluations. Schools and postsecondary institutions must document and report the number of students who matriculate to postsecondary institutions and the number of students who complete programs specified in Tech-Prep articulation agreements. Data is disaggregated by gender, race, economic condition, and other variables (THECB, 2001).

Performance Measures and Standards

Note: The measures and standards described in this section were put into place in 2001 and are based on Perkins III. The reader should consult the THECB website for updates/changes in the *Guidelines for Instructional Programs in Workforce Development (GIPWE)* that reflect Perkins IV legislation <http://www.thecb.state.tx.us/>



The THECB (2001) has established the following performance measures and standards to be used to evaluate each consortium:

1. Measure 1: The secondary participation rate.
Standard 1: The rate shall be at least the state average (based on data provided by the Texas Education Agency) for the previous year, and shall be increasing from year-to-year.
2. Measure 2: The postsecondary participation rate.
Standard 2: The rate shall be at least the state

average (based on data provided by the Texas Higher Education Coordinating Board) for the previous year and shall be increasing from year-to-year.

3. Measure 3: The appropriate and timely expenditure of Tech Prep funds.
4. Standard 3: The consortium shall have spent at least 95 percent of its allocated funds during the previous year and not had any findings during the fiscal desk review process.
5. Measure 4: Maintenance of detailed time distribution records for staff paid from multiple sources of funds. Standard 4: Time distribution records shall be completed for each consortium employee paid from multiple funds on at least a monthly basis, and be an accurate reflection of the time-on-task for consortium activities related to Tech Prep. Monthly time sheets must be on file at the consortium office for a minimum of three years.
6. Measure 5: Timely submission of accurate quarterly reports to the Coordinating Board. Standard 5: Quarterly reports shall be submitted by Coordinating Board due dates and include a response for each goal and objective listed in that report.
7. Measure 6: Participation of consortia at state Tech Prep quarterly and called meetings. Standard 6: Attendance by at least one consortium representative is required at all state Tech Prep meetings.

8. Measure 7: Site visits to member institutions and public schools. Standard 7: All consortium member institutions and public schools shall receive at least two site visits each grant year from consortium staff. Documentation of site visits shall be included as part of the final report for the grant year to the Coordinating Board. (Texas Legislative Code, Chapter 9, Subchapter K – Tech Prep Programs and Consortia section.)

While Tech Prep programs in Texas have required assessments to determine success statewide as well as in each school, postsecondary institution, and consortium, educators may determine there is a need for other data to provide evidence of progress unique to their programs. Among issues to discuss during planning for a new Tech Prep program are the kinds of data needed to measure the program's success beyond what is currently collected, when and how it will be collected, how it will be shared, how it will be recorded, etc.

VI. What are the barriers and challenges to Tech Prep programs?

Several Tech Prep consortium directors identified seven barriers as having a major, or very major, impact on Tech Prep implementation (Bragg, 2006):

- Programs are stereotyped as appropriate for students with academic and social problems;
- Local educators fail to understand the Tech Prep concept;
- Programs lack acceptance as rigorous academic programs;
- Lack of financial resources;
- Inconsistent identification of Tech Prep students; and
- Lack of parental support.

Other challenges may include

- Students and parents lack knowledge of the program, especially those students who have been traditionally underserved by public schools;
- Because Tech Prep programs may vary between districts and between institutions, secondary and postsecondary staff must work to clarify programs for all stakeholders. Students and parents will need program

information before students develop high school plans as well as during high school;

- Small schools, and schools located in rural areas, may have limited offerings;
- Postsecondary institutions may be some distance away;
- Shortage of equipment that meets business and industry standards; and
- Failure to work closely with business and industry leaders in the area.

VII. Where are additional resources located?



- **AchieveTexas** (an education initiative designed to prepare students for success in secondary and postsecondary settings):
<http://www.achievetexas.org>
- **Career and Technical Education Improvement Act of 2006 U.S. Public Law 109-270.**
- **Chapter 9, Subchapter K. Tech Prep Programs and Consortia, Program Development in Public Two-Year Colleges** (Texas Education Code: rules effective August 15, 2006, 31 Tex Reg 6331).
- **Guidelines for Instructional Programs [includes Tech Prep] in Workforce Education (GIPWE), Part II.**
<http://www.techpreptexas.org/about-techprep.html>
- **States' Career Clusters Initiative:**
<http://www.careerclusters.org/index.php>
- **Tech Prep Texas Website:** <http://www.techpreptexas.org/>

- Texas Education Agency: www.tea.state.tx.us
- Texas Higher Education Coordinating Board: <http://www.thecb.state.tx.us/>
- U.S. Department of Education: <http://www.ed.gov/index.jhtml>

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