

1. Implementation of State Leadership Activities

Secs. 124(b) and (c) of *Perkins IV* describe the required and permissible uses of state leadership funds, respectively. Provide a summary of your state's major initiatives and activities in **each of the required areas**, as well as **any of the permissible areas that your state has chosen to undertake** during the program year.

PDE/BCTE State Improvement Activities

During the 2007-2008 Transition Year Pennsylvania's Bureau of Career and Technical Education embarked on multiple initiatives to ensure compliance with Perkins IV legislation. Those initiatives included the following: (1) reauthorization of Chapter 339, state Vocational Education regulations and standards for approval and retention of state reimbursable Career and Technical Education programs; (2) "Program of Study" development to address the implementation of state defined "High Priority Occupations" (HPO) aligning both secondary and postsecondary CTE programs offered under a state developed articulation agreement; (3) alignment of newly defined Perkins IV Local Plan Assurances with the Bureau of Career and Technical Education's Approved Program Evaluation (APE) tool used for monitoring compliance of PA's 339 regulations and Perkins IV Assurances; (4) establishing Technical Assistance Plan and a "Career and Technical Distinguished School Leaders" statewide technical assistance initiative to increase academic/technical skill achievement for all students by working directly with career and technical center and sending school district personnel.

a. **Required Use of Funds:**

- **Conducting an assessment of the vocational and technical education programs funded under *Perkins IV*;**

The Program Standards and Quality Assurance Division conduct Approved Program Evaluations for all CTC's and school districts within the commonwealth. The assessment is completed using an approved program evaluation instrument that includes all compliance requirements as identified in applicable regulations governing the offering of CTE, namely Title 22, Chapter 4 Academic Standards and Assessment and Chapter 339, Vocational Education Standards. Teams of educators along with BCTE leadership conduct three day program approval visits identifying program commendations, recommendations for improvement and citing any violations. Schools are then provided with the opportunity to correct, within applicable time frames, any deficiencies noted. At the postsecondary level, on-site visits are conducted utilizing the state developed monitoring tool to address all performance and required uses of funds.

- **Developing, improving, or expanding the use of technology in career and technical education;**

The Bureau of Career and Technical Education during the transition (2007-08) year granted in excess of \$4M in Equipment and Curriculum funding combined to expand the use of technology in CTE programs supporting state defined High Priority Occupational (HPO) programs focused on increasing academic proficiency, technical skill attainment, and increased industry aligned certifications. Postsecondary programs utilize Perkins funds to purchase state of the art equipment to support postsecondary CTE programs leading to a credential, certificate or degree in high skill/wage/demand occupation as defined by the PA Department of Labor

- **Offering professional development programs, including providing comprehensive professional development (including initial teacher preparation) for career and technical education teachers, faculty, administrators, and career guidance and academic counselors at the secondary and postsecondary levels;**

The Pennsylvania State Department of Education's Bureau of Career and Technical Education developed and implemented a Comprehensive Professional Personnel Development program by working with the three Professional Personnel Development Centers. The Centers were established and approved by the Pennsylvania State Board of Education on July 1, 1978. The Centers are located at Indiana University of Pennsylvania of Pennsylvania, Pennsylvania State University and Temple University. The mission of each Center is to provide comprehensive regional personnel development for career and technical education programs that are specifically designed to prepare, update and upgrade career and technical teachers, administrators and other career and technical education support personnel.

The Centers provide a wide range of professional development activities for career and technical educators.

During 2007-2008, the Centers provided pre-service and in- service professional personnel development services for approximately 1,500 and 9,429 career and technical educators respectively. All activities are directly related to the mission of the Centers.

The Seventeenth Annual Conference on *INTEGRATED LEARNING: THE SCHOOL-TO-CAREER CONNECTION* was held November 12-14, 2008. This annual conference is conducted by the Pennsylvania Department of Education, Bureau of Career and Technical Education. This Conference is designed to share successful strategies that encourage the implementation of educational initiatives to enhance learning opportunities for all students. These initiatives focus on interdisciplinary approaches that include the identification of effective practices, business linkages, partnerships, career pathways, assessment, workforce development and instructional strategies for lifelong learning.

Three pre-conference workshops offered were: *Engaging Learners in the 21st Century*, *Leveraging the HSTW Assessment: The Role of Data in School Improvement* and *Developing a Skilled Workforce by Embedding Math in Career and Technical Education Programs*.

Topics to be addressed at the conference include:

- Academic Rigor
- Academic Integration
- Best Practices
- Educational Leadership
- Improving Literacy
- Instructional Strategies
- Integrated Curricula
- Successful Partnerships
- World Class Workforce

Related Strands at the conference include:

- Program of Study Development
 - Technical Centers That Work (SREB)
 - Special Education Coordination
 - Career Development
 - Nontraditional Development
- **Providing support for career and technical education programs that improve the academic and career and technical skills of students through the integration of academics with career and technical education;**

BCTE has established a “Best Practices” website to highlight: integration of academics into technical program content; special education practices to assist CTE staff with student IEP’s to improve student academic achievement. The Bureau also provides support during the monitoring visits. The Conference on Integrated Learning the School to Career Connection has concurrent sessions that are applicable to secondary and postsecondary Perkins recipients. The sessions are focused on academic/technical integration, career education, Tech Prep, Programs of Study, special education and nontraditional.

*http://www.pde.state.pa.us/career_edu/cwp/view.asp?a=270&q=139583&career_eduNav=3842

- **Providing preparation for nontraditional fields in current and emerging professions, and other activities that expose students, including special populations, to high skill, high wage occupations, except that one-day or short-term workshops or conferences are not allowable;**

The Bureau designed technical assistance specific to nontraditional enrollments. The technical assistance provided to Perkins recipients includes:

- Presentations by USDOL Science, Technology, Engineering and Math (STEM) representatives at the Perkins regional meeting in the fall of 2008.
- Update of the Perkins/Nontraditional website to provide a compilation of strategies to recruit and retain individuals in nontraditional training programs.
- Conference calls with and in-service training of New Choices/New Options project directors to encourage contacts with secondary and postsecondary Perkins coordinators and CTSO advisors to provide services to students enrolled in nontraditional programs, including STEM programs.
- Staff suggested LEAs include individuals employed in nontraditional careers to serve on PPCs and OACs.
- BCTE staff available to work with individual schools requesting assistance.
- **Supporting partnerships among local education al agencies, institutions of higher education, adult education providers, and, as appropriate, other entities, such as employers, labor organizations, intermediaries, parents, and local partnerships, to enable students to achieve state academic standards, and career and technical skills, or complete career and technical programs of study;**

The Agency supports partnerships in a number of ways and includes partnerships with business and industry, between secondary and postsecondary providers. The focus of the partnerships is on improving student academic and technical skill attainment levels.

Associated Pennsylvania Constructors The Associated Pennsylvania Constructors Organization is supported by PDE/ BCTE for the 2008/09 school year amounting to \$15, 000 to assist with three Pennsylvania Construction Career Day/ Job Fair Events for secondary CTE students. These three events occur in selected locations across the western, central and eastern regions of the state. CTE students who attend these events explore career opportunities in highway design, construction, and maintenance. The students gain information about the highway, bridge design, construction, and maintenance programs, apprenticeship programs, University Level Construction and Engineering Programs in addition to the hands-on activities. Planned hands-on activities include operating heavy equipment, testing materials, surveying, welding, designing a bridge, use of safety equipment, concrete finishing, drilling, rebar tying, estimating a job, use of GPS/GIS information technology, and much more. Small groups of students are escorted by construction industry volunteers who serve as a source of information about the business as well as guides to the

activities. The events this year will occur at Western Area Career and Technical Center in Canonsburg on December 9th. Two spring 2009 events are being planned including a Pennsylvanian Construction Career Day/ Job Fair Event at the York Expo Center and a similar event in the Lehigh Valley at a site yet to be determined. Last year, over 1,200 secondary school CTE students attended the Pennsylvanian Construction Career Day/ Job Fair Events statewide.

PA Hospitality and Tourism Foundation. The PA Hospitality and Tourism Foundation is supported by PDE/ BCTE for the 2008/09 school year amounting to \$10,000 to assist with the development and distribution of curriculum materials in the Lodging Management Programs in secondary career and technical schools statewide. One of the PA Hospitality and Tourism Foundation events include Culinary Career Days which are scheduled in Hershey on February 17, 2009, and Pittsburgh, March 24, 2009 at the Sewall Center Robert Morris University. For the Hershey Event, speakers, include: Chef Walter Scheib, Chef Tina Haldeman and Professor Rosemarie Hibler from Penn State. The Pittsburgh Event features guest speakers Dr. Pierce Miller, President of the PA Culinary Institute and Chef Jeremy Critchfield, Executive Chef and Director of Food and Beverage Operations at Nemacolin Woodlands Resort & Spa., Farmington, PA. The Culinary Career Days events are intended to educate and motivate high school level and post-secondary students of the culinary arts. At these events, students can learn of the career path and meet and greet some of the area's finest chefs. There will be cooking and dessert demonstrations. Job skills seminars like: Resume Writing Skills - Interviewing Techniques – Your Professional Image- is offered. Also, students can meet with postsecondary schools which offer outstanding Culinary Programs. On October 24, an informational e-mail was forwarded from the BCTE to secondary school culinary arts teachers statewide to inform them about this event. The PA Hospitality and Tourism Foundation anticipate over 300 participants to attend each event.

PA Automotive Association/AYES held a meeting was on October 7th to plan for the yearly secondary school's AYES Automotive Technology Competition Event. This year's competition will be at the Radisson Penn Harris Convention Center on March 4, 2009. Set-up and move-in will occur on March 3, 2009, to prepare for the next day. The Committee discussed the six (6) workstations and agreed they will be 15 minutes per station for a total of 120 points: workstations include activities in: Alignment, Electrical, Measurement Station, Brakes, Waveform, and Information Systems. The PA Automotive Association/AYES Committee discussed having Kevin Henry from ABC-27-WHTM as Master of Ceremonies, if available, as well as attempts to increase news coverage on this event. Streaming video of the students or a picture slide of last year's participants was discussed. The Committee also discussed having a session where career and scholarship opportunities are discussed with the parents. The following schools offering automotive technology programs will be attending this year's competition event: CTC of Lackawanna County, Cumberland-Perry AVTS, Lebanon County CTC, Keystone Central CTC, Wallenpaupack Area High School,

Franklin County AVTS, West Side AVTS, Susquehanna County CTC, Williamsport Area High School, Tunkhannock High School.

The PA Partners Organization is supported by PDE/ BCTE for the 2008/09 school year amounting to \$10,000 to assist with the 2009 PA Partner's Annual Employment, Training and Education Conference and to survey the CTCs and local workforce investment boards (WIB) to gather best practices. The best practices are related to working relationships between the CTC and local WIBs. The conference will be held on May 6-8, 2009 at the Hershey Lodge and Convention Center, Hershey, PA. Currently, the BCTE is exploring the possibility of presenting workshop sessions in the PDE Career and Work Standards, secondary school and industry partnership connections, and a new career and technology curriculum developed in geospatial technology.

Development of the Programs of Study has led to increased relations between secondary teachers and postsecondary faculty. Through this ongoing effort, staff has been able to review and discuss sequencing of coursework and alignment of technical course content that is rigorous.

- **Serving individuals in state institutions;**

Annually, BCTE passes through 1% of the Perkins program allocation to serve youth in Pennsylvania's detention/corrections facilities. The funds support instructional staff at four state correctional institutions (SCI). The SCIs provide career and technical training leading to trade-based certifications in programs that offer employment opportunities in high demand occupational clusters throughout Pennsylvania.

- **Providing support for programs for special populations that lead to high skill, high wage and high demand occupations; and**

BCTE works with the PA Vocational Education Special Needs Professionals (PAVESNP) and the PA Training and Technical Assistance Network (PATTAN) to provide professional development to CTE and regular education personnel to increase and align support and services to special populations students.

The Agency is currently working with the Pennsylvania Association of Career and Technical Administrators to develop and offer technical assistance that is focused on improving the performance indicators associated with special populations, specifically nontraditional.

The Agency has identified schools that evidence greatest need for assistance in the area of student academic and technical attainment. Identification was based on review of statewide assessment data. The Agency has been collecting best practices which are found on the Pennsylvania Department of Education

website. The best practices list detailed descriptions of actions that will lead to increased student achievement.

- **Offering technical assistance for eligible recipients**

Annually, 20 percent of the underperforming Perkins funded recipients will be selected for on-site compliance technical assistance visits based on the following criteria: most recent validated performance data putting the program at risk of noncompliance with Perkins performance measures as identified in the FAUPL; mismanagement of the plan as evidenced by guideline violations in regards to timely submission of the annual application, performance assessment, program data and fiscal reporting.

In addition, of the 20% of programs selected annually for onsite reviews, one-third of the lowest performing consortiums will be required to participate in BCTE determined professional development, technical assistance workshops, conferences and related CTE improvement activities.

b. **Permissible Use of Funds**

- **Improving career guidance and academic counseling programs;**

As of 2007-08 PDE/BCTE has funded over three million dollars in College and Career Counseling grants to eligible school districts. The College and Career Counseling (CCC) state grants are one of many school initiatives offered as part of the Governor's overall education reform agenda. Competitive grants were awarded to school districts to support systemic enhancement to career and counseling efforts. Successful school districts received grant awards between \$50,000 and \$200,000. The grants represent an effort to up grade career counseling services in grades 8-12.

The grant recipients capitalize on the collaboration and leadership skills of school administrators, teachers, and counselors to create a vibrant career exploration, career planning and goal setting process for each and every student in grades 8-12. Successful applicants were expected to create a student-centered career development system that will ensure increasingly more students each year are prepared for college and career success upon graduation.

- **Establishing agreements, including articulation agreements, between secondary school and postsecondary career and technical education programs to provide postsecondary education and training opportunities for students;**

Statewide articulation agreements are being developed in conjunction on all CIP-SOC based and state defined High Priority Occupations (HPO) Programs of Study. The Bureau of Career and Technical Education (BCTE) is currently

working on statewide articulation agreements ensuring the transfer of credit that link secondary education and postsecondary education for participating career and technical education students.

The articulation agreement is a written commitment that is agreed upon at the state level between a secondary institution and a postsecondary educational institution to a program that is linked through credit transfer agreements between the two institutions. BCTE has contracted with Academy One, a web destination and course clearinghouse site designed to address student mobility across educational institutions. Academy One has designed an articulation process through which postsecondary institutions can examine the BCTE Programs of Study and indicate how that institution will articulate credit. In addition, the BCTE has drafted an informational letter notifying postsecondary institutions of the statewide articulation efforts. BCTE is currently working with the Bureau of Postsecondary Services to finalize articulation agreement language and facilitate compliance of the Perkins mandate.

- **Supporting initiatives to facilitate the transition of sub baccalaureate career and technical education students into baccalaureate programs;(N/A at this time).**
- **Supporting career and technical student organizations;**

In 2007-08 BCTE committed \$58,000 in grant funding to support CTSO programs. Through this support, the Bureau gives assistance to career and technical student organizations (CTSO) by providing for curricular activities that enhance the quality of student leadership training at secondary and collegiate levels. Each of the 8 CTSO program areas has an active statewide organization. These include DECA: An Association of Marketing Students; FBLA: Future Business Leaders of America; FCCLA: Family, Career and Community Leaders of American; FFA: An Association of Agriculture Education Students; HOSA: Health Occupation Students of American; PYFA: Pennsylvania Young Farmers Association; VICA: Skills USA; and TSA: Technology Students Association.

- Conduct workshops among the eight CTSOs to assist students in acquiring leadership skills; prepare students for competitive events, participation in judging events; assist with statewide conferences, and prepare for national conferences.
- Provide for consultants to develop new and update tests for competitions at the regional and state levels.
- Provide resource materials, supplies and software to assist with the eight CTSOs annual statewide conferences.

- Assist CTSOs advisors to develop programs of work and students' activities for their local chapters.

- **Supporting family and consumer sciences programs;**

Major initiatives and activities that support the Family and Consumer Sciences (FCS) Program are the development of the Curriculum Framework for the Standards Aligned System and the development of Program of Studies for the Child development area of FCS. Major training and professional development is occurring to prepare students to sit for the Child Development Associate (CDA) READY certification. Currently the Agency is developing model curriculum that is based on the K-12 State Board of Education approved Family and Consumer Sciences academic standards.

- **Developing or enhancing data systems to collect and analyze data on secondary and postsecondary academic and employment outcomes;**

In 2007-2008 the Pennsylvania Department of Education began implementation of a unified data collection system known as the Pennsylvania Information Management System, (PIMS) This system uses a PAMSecureID to obtain all student level data to report accurate, valid and reliable data to all funding sources, as well as, helps PDE and BCTE target resources where technical assistance is needed.

2. **Progress in Developing and Implementing Technical Skill Assessments**

Sec. 113(b) of *Perkins IV* describes the core indicators of performance for career and technical education students for which each state is required to gather data and report annually to the Department. Among the core indicators are student attainment of career and technical skill proficiencies, including student achievement on technical assessments aligned with industry-recognized standards, if available and appropriate. [See Sec. 113(b)(2)(A)(ii) of *Perkins IV*.] While the Department recognizes that a state may not have technical skill assessments aligned with industry-recognized standards in every career and technical education program area and for every career and technical education student, the Department asked each state to identify, in Part A, Sec. VI (Accountability and Evaluation) of its new *Perkins IV* State Plan: (1) the program areas for which the state had technical skill assessments; (2) the estimated percentage of students who would be reported in the state's calculation of career and technical education concentrators who took assessments; and (3) the state's plan and timeframe for increasing the coverage of programs and students reported in this indicator to cover all career and technical education concentrators and all program areas in the future. Please provide an update on your state's progress and plan for implementing technical skill assessments with respect to items one through three above.

At the secondary level, Pennsylvania utilized the National Occupational Competency Testing Institute (NOCTI) and the National Institute of Metalworking Skills (NIMS) to

provide end of program assessments. These assessments are aligned with (and developed on the basis of) national industry standards. Out of 102 approved programs, 87 of them have been cross-walked to tests available from the two test providers. This match enables Pennsylvania to assess nearly 90% of program concentrators and report their technical skill attainment. For a list of assessments, see Attachment A.

Other industry tests are available for some of the remaining CIP codes. However, PDE has yet to receive an adequate assurance that assessment data will be provided at the end of the reporting year.

Postsecondary technical skill attainment is currently measured in terms of Grade Point Average (GPA). The GPA approach provides coverage of all postsecondary concentrators as maintained in the Pennsylvania Adult and Postsecondary Student Attainment (PAAPSA) system. Satisfactory attainment is obtained for any student who receives a GPA of 2.5 or higher on a 4-point scale in occupational courses for which grades are assigned. For other occupational courses that use the Pass/Fail format, passing is translated as equivalent to 2.5 GPA. This is initially due to the large number of programs of varying emphasis, scope, duration, and local industry needs.

Pennsylvania is in the process of implementing Programs of Study at the secondary and postsecondary levels for the purpose of creating a seamless transition. Identifying the task lists and creating test specification blueprints will help test providers to develop end of program tests at both secondary and postsecondary levels. This process is still in the beginning stages.

3. Implementation of State Program Improvement Plans

Sec. 123(a)(1) of *Perkins IV* requires each state, that fails to meet at least 90 percent of an agreed upon state adjusted level of performance for any of the core indicators of performance described in Sec. 113(b)(3) of *Perkins IV*, to develop and implement a program improvement plan, with special consideration given to performance gaps identified under Sec. 113(c)(2) of *Perkins IV*. The plan must be developed and implemented in consultation with appropriate agencies, individuals, and organizations. It must be implemented during the first program year succeeding the program year for which the state failed to meet its state adjusted levels of performance for any of the core indicators of performance.

Please review your state's accountability data in Part D of this report. If your state failed to meet at least 90 percent of a state-adjusted level of performance for any of the core indicators of performance under Sec. 113 of Title I of the Act, please provide a state program improvement plan that addresses, at a minimum, the following items:

The core indicator(s) that your state failed to meet at the 90 percent threshold;

- a) The disaggregated categories of students for which there were quantifiable disparities or gaps in performance compared to all students or any other category of students;

- b) The action steps which will be implemented, beginning in the current program year, to improve the state's performance on the core indicator(s) and for the categories of students for which disparities or gaps in performance were identified;
- c) The staff member(s) in the state who are responsible for each action step; and
- d) The timeline for completing each action step

See Attachment B for the state improvement plan.

4. **Implementation of Local Program Improvement Plans**

Sec. 123(b)(1) of *Perkins IV* requires each state to evaluate annually, using the local adjusted levels of performance described in Sec. 113(b)(4) of *Perkins IV*, the career and technical education activities of each eligible recipient receiving funds under the basic grant program (Title I of the Act). Sec. 123(b)(2) of *Perkins IV* further requires that if the state, after completing its evaluation, determines that an eligible recipient failed to meet at least 90 percent of an agreed upon local adjusted level of performance for any of the core indicators of performance described in Sec. 113(b)(4) of *Perkins IV*, the eligible recipient shall develop and implement a program improvement plan with special consideration given to performance gaps identified under Sec. 113(b)(4)(C)(ii)(II) of *Perkins IV*. The local improvement plan must be developed and implemented in consultation with appropriate agencies, individuals, and organizations. It must be implemented during the first program year succeeding the program year for which the eligible recipient failed to meet its local adjusted levels of performance for any of the core indicators of performance.

Please review the accountability data submitted by your state's eligible recipients. Indicate the total number of eligible recipients that failed to meet at least 90 percent of an agreed upon local adjusted level of performance and that will be required to implement a local program improvement plan for the succeeding program year. Note trends, if any, in the performance of these eligible recipients (i.e., core indicators that were most commonly missed, including those for which less than 90 percent was commonly achieved; and disaggregated categories of students for whom there were disparities or gaps in performance compared to all students).

See Attachment B for the local improvement plan.

5. **Tech Prep Grant Award Information**

Sec. 205 of *Perkins IV* requires each eligible agency that receives a tech prep allotment to annually prepare and submit to the Secretary a report on the effectiveness of the tech prep programs that were assisted, including a description of how grants were awarded in the state. Please provide a description of how grants were awarded during the program year, including a listing of the consortia that were funded and their funding amounts.

In support of the emphasis on CTE Improvement in Perkins IV, the responsibilities of the Tech Prep regional consortia within PA changed to reflect this vision. Additionally, the development of 22 PA Programs of Study (POS) aligned to PA High Priority Occupations (HPO) further refined the goals of Tech Prep in the state and helped to move us towards more standardized curricular frameworks for technical programs. Regional Tech Prep consortia prioritized POS development and then supported regional secondary and postsecondary schools with PDE approved CTE programs to adopt and prepare to implement POS. A consistent message concerning POS development and POS requirements is being disseminated by these 12 regional Tech Prep coordinators and staff. In-services are increasing in scope and effectiveness as greater numbers of secondary and postsecondary academic and technical educators, counselors, and administrators at both levels are gathering to receive direction and assistance. Professional development activities emphasize the importance of academic and technical integration, strong links to business and industry, and appropriate preparation for college and careers for all students. Eligible content and academic standards are being aligned to CTE competencies in all developing POS to ensure improved PSSA scores for all students. POS are being developed to ensure a seamless connection between secondary and postsecondary instruction. Educators in the Workplace programs have gained popularity and relevance in difficult economic time and are serving greater numbers of academic and technical instructors. Evaluations of their effectiveness show positive responses. Preparatory services provide career camps aligned to the HPO, and a number of programs engage students in grades 7-12 to deliberately plan for their futures of college and the world of work. Regionally, assistance to schools to establish career guidance and academic counseling is on the increase. The development of career pathways in several PA regions has served to coordinate the delivery of appropriate and rigorous academic preparation for technical studies.

According to baseline data collected for the 2008 CAR, 56% of 2006-07 postsecondary Tech Prep graduates were employed in a related field six months after graduation. As further emphasis is applied to the area of preparatory services, it is expected that this number will grow as more students gather greater understanding of the potential for actively pursuing well chosen fields of study. Additionally, 44% of postsecondary Tech Prep students completed the 2-year portion of the postsecondary program. With the rise in dual enrollment and the advanced college experience, PA fully expects that this number will continue to increase. As PA data systems continue to evolve and with the recent membership to the National Student Clearinghouse, streamlined data collection and reporting are expected as we begin negotiations with regional Tech Prep consortia for the remaining years of Perkins IV.

Sec. 201 of *Perkins IV* requires State allotments for Tech-Prep to be made available under section 206. Tech Prep awards will be granted on a competitive basis for the initial application in 2008-2009. The awards are given for a multi year approval. The first year of the award is 2008-09 and will cease with the end of Perkins IV. Based on the awards of these grants, the 12 selected regions will maintain Tech Prep funding based on the consortium's ability to show steady improvement in meeting required accountability measures.

Each eligible agency that receives Tech Prep funds did prepare and submit annual reports to the Department on the effectiveness of the Tech Prep programs. Grants were awarded to consortia comprised of educational secondary and postsecondary institutions that have previously implemented Tech Prep programs into their local region schools. During the transition year, the Tech Prep consortia assisted PDE in developing POS that meet Perkins IV requirements.

The application submitted for all consortia must contain a plan to provide support to their local schools for implementing Tech Prep Programs of Study that were reviewed.

PDE required the following of Tech Prep applications –

- Support the implementation of Tech Prep Programs of Study within the state defined regions, as recognized by the Pennsylvania Department of Education (PDE).
- Encourage statewide articulation agreement be designed for all PDE approved Career and Technical Education Programs of Study to schools in their region.
- Facilitate the alignment of academic and technical curriculum between secondary and postsecondary levels that meets industry standards related to an approved Tech Prep Program of Study.
- Facilitate the alignment of curriculum between secondary and postsecondary levels that meets PA Academic Standards related to the approved Tech Prep Programs of Study.
- Facilitate the alignment of academic and technical curriculum between secondary and postsecondary levels to eliminate the need for remediation at the postsecondary level.
- Assess, plan, develop, organize and implement Tech Prep Program of Study activities within the state defined regions, as recognized by the Pennsylvania Department of Education (PDE).
- Maintain communication with all consortium schools that have PDE approved Career and Technical Education Tech Prep Programs of Study.
- Assist all consortium schools in the identification and reporting of Tech Prep students within PDE approved Career and Technical Education Tech Prep Programs of Study.
- Assist in the development of the postsecondary component of one of the PA “Programs of Study” by assembling a committee ensuring statewide representation of postsecondary instructors.

The 2008-2013 Tech Prep Guidelines will introduce a restructure of the current Tech Prep consortia.

- Central Region: Centre, Clinton, Columbia, Juniata, Lycoming, Mifflin, Montour, Northumberland, Snyder and Union counties
- Lehigh Valley Region: Lehigh and Northampton counties
- North Central Region: Cameron, Clearfield, Elk, Jefferson, McKean and Potter counties
- Northeast Region: Carbon, Lackawanna, Luzerne, Monroe, Pike, Schuylkill and Wayne counties

- Northern Tier Region: Bradford, Sullivan, Susquehanna, Tioga and Wyoming counties
- Northwest Region: Clarion, Crawford, Erie, Forest, Lawrence, Mercer, Venango and Warren counties
- Philadelphia Region: Philadelphia County
- Pittsburgh Region: Allegheny County
- South Central Region: Adams, Cumberland, Dauphin, Franklin, Lebanon, Perry and York counties
- Southeast Region: Berks, Bucks, Chester, Delaware, Lancaster, and Montgomery counties
- Southern Alleghenies Region: Bedford, Blair, Cambria, Fulton, Huntingdon and Somerset counties
- Southwest Region: Armstrong, Beaver, Butler, Fayette, Greene, Indiana, Washington and Westmoreland counties

Attachment A
List of Technical Skills Assessments Used for Pennsylvania
Approved CTE Programs

STUDENT OCCUPATIONAL COMPETENCY TESTING IN PENNSYLVANIA

2008-2009 TEST CROSSWALK

List of Secondary CIP Codes and Program Titles Crosswalked to NOCTI Test Numbers and Titles/Other PDE Approved Tests

This crosswalk is to be used, along with approved program list, when ordering tests. If no end-of-program test exists for an approved program, the *Waiver Request Form* must be completed.

CIP CODE	STATE INSTRUCTIONAL TITLE	NOCTI TEST#	TEST TITLE
1 - AGRICULTURE, FOOD & NATURAL RESOURCES			
01.0105	Agricultural/Farm Supplies Retailing & Wholesaling	2063	Production Agriculture
01.0201	Agricultural Mechanization, General	2102	Agriculture Mechanics
01.0301	Agricultural Production Operations, General	2063	Production Agriculture
01.0401	Agricultural & Food Products Processing	na	Complete <i>Waiver Request Form</i>
01.0601	Applied Horticulture/Horticultural Operations, General	3049	Floriculture
		3949	Floriculture-Greenhouse
		3149	Horticulture - Landscaping
01.9999	Agriculture, Agriculture Operations and Related Sciences, Other	2063	Production Agriculture
01.0000	Agriculture, General	2063	Production Agriculture
		2102	Agriculture Mechanics
01.5999	Agriculture/Natural Resources Technology	2037	Forestry Products & Processing
		2063	Production Agriculture
		3149	Horticulture - Landscaping
03.0511	Forestry Technology/Technician	2037	Forestry Products & Processing
03.0599	Forestry, Other	2037	Forestry Products & Processing
03.0299	Natural Resources Management & Policy, Other	2037	Forestry Products & Processing
15.0903	Petroleum Technology/Technician	na	Complete <i>Waiver Request Form</i>
2 - ARCHITECTURE & CONSTRUCTION			
15.1303	Architectural Drafting and Architectural Drafting CAD/CADD	3004	Architectural Drafting
46.0499	Building/Construction Finishing, Management and Inspection, Other	3012	Building Trades Maintenance
46.0401	Building/Property Maintenance and Manager	3012	Building Trades Maintenance
46.0201	Carpentry/Carpenter	3015	Carpentry
46.5999	Construction Technology	2011	Building Construction Occupations
46.9999	Construction Trades, Other	2011	Building Construction Occupations
46.0399	Electrical and Power Transmission Installers, Other	2031	Electrical Occupations
		4030	Electrical Construction Technology
		2050	Industrial Electricity
15.0507	Environmental Engineering Technology/Environmental Technology	2475	Pre-Engineering/Engineering Technology
47.0201	Heating, Air Conditioning, Ventilation and Refrigeration Maintenance	3045	HVAC
		3064	HVAC-R
46.0303	Lineworker	2050	Industrial Electricity
		2031	Electrical Occupations
		4030	Electrical Construction Technology
46.0101	Mason/Masonry	3025	Construction Masonry - Blocklaying
		3125	Construction Masonry - Bricklaying
		3225	Construction Masonry - Stone
46.0408	Painting/Painter and Wall Coverer	2060	Painting and Decorating
46.0502	Pipefitting/Pipefitter and Sprinkler Fitter	3061	Plumbing

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<u>CIP CODE</u>	<u>STATE INSTRUCTIONAL TITLE</u>	<u>NOCTI TEST#</u>	<u>TEST TITLE</u>
3 - ARTS, AV TECHNOLOGY & COMMUNICATIONS			
50.0802	Cinematography and Film/Video Production	2005	Audio-Visual Communications Technology
		2427	Television Production
		2425	Visual Communications and Multimedia Design
50.0402	Commercial and Advertising Art	4019	Advertising and Design
		2425	Visual Communications and Multimedia Design
50.0406	Commercial Photography	na	Complete <i>Waiver Request Form</i>
50.5999	Communications Technology	2005	Audio-Visual Communications Technology
10.0399	Graphic Communications, Other	4142	Graphic Communications Technology
		4019	Advertising and Design
50.9999	Visual & Performing Arts, Other	2427	Television Production
		2425	Visual Communications and Multimedia Design
4 - BUSINESS, MANAGEMENT AND ADMINISTRATION			
52.0302	Accounting Technology/Technician and Bookkeeping	3000	Accounting Basic
		3900	Accounting Advanced
52.0401	Administrative Assistant and Secretarial Science, General	4001	Administrative Assisting
		3013	Business Information Processing
52.0701	Entrepreneurship/Entrepreneurial Studies	3033	Workplace Readiness
		4053	Retail Trades
52.0408	General Office Occupations and Clerical Services	4001	Administrative Assisting
5 - HEALTH SCIENCE			
51.0802	Clinical/Medical Laboratory Assistant	4055	Medical Assisting
51.0801	Dental Assisting/Assistant	4026	Dental Assisting
51.5999	Health Care Technology	4055	Medical Assisting
		3043	Health Assisting
		2048	Home Health Aide
51.0707	Health Information/Medical Records Technology/Technician	na	Complete <i>Waiver Request Form</i>
51.0899	Health/Medical Assisting Services, Other	3043	Health Assisting
		4058	Nursing Assisting
51.9999	Health Professions & Related Clinical Sciences, Other	3043	Health Assisting
		4055	Medical Assisting
		4058	Nursing Assisting
51.2602	Home Health Aide/Home Attendant	2048	Home Health Aide
51.0801	Medical/Clinical Assistant	4055	Medical Assisting
51.1614	Nurse/Nursing Assistant/Aide and Patient Care Assistant	4058	Nursing Assisting
51.0808	Veterinary/Animal Health Technology/Technician & Veterinary Assistant	na	Complete <i>Waiver Request Form</i>

STUDENT OCCUPATIONAL COMPETENCY TESTING IN PENNSYLVANIA

2008-2009 TEST CROSSWALK

List of Secondary CIP Codes and Program Titles Crosswalked to NOCTI Test Numbers and Titles/Other PDE Approved Tests

This crosswalk is to be used, along with approved program list, when ordering tests. If no end-of-program test exists for an approved program, the *Waiver Request Form* must be completed.

CIP CODE	STATE INSTRUCTIONAL TITLE	NOCTI TEST#	TEST TITLE
6 - HOSPITALITY AND TOURISM			
12.0501	Baking and Pastry Arts/Baker/Pastry Chef	3010	Retail Commercial Baking
		0991	Culinary Arts (Form 2 ACF)
12.0508	Institutional Food Workers	3020	Commercial Foods
		0991	Culinary Arts (Form 2 ACF)
		4036	Culinary Arts I - Prep Cook
		4136	Culinary Arts II - Cook
12.0506	Meat Cutting/Meat Cutter	na	Complete <i>Waiver Request Form</i>
52.1905	Tourism and Travel Services Marketing Operations	2079	Hospitality Management-Food & Beverage
		2080	Hospitality Management-Lodging
7 - HUMAN SERVICES			
32.0107	Career Exploration/Awareness Skills	3033	Workplace Readiness
19.0708	Child Care and Support Services Management	3016	Early Childhood Care and Education
19.5999	Consumer Service Technology	2018	Clothing and Textile Management and Production
		3016	Early Childhood Care and Education
		4036	Culinary Arts I - Prep Cook
		4136	Culinary Arts II - Cook
19.0699	Housing & Human Environments, Other	na	Complete <i>Waiver Request Form</i>
19.0799	Human Development, Family Studies & Related Services, Other	2048	Home Health Aide
32.0105	Job-Seeking/Changing Skills (Diversified Occupations)	3033	Workplace Readiness
8 - INFORMATION TECHNOLOGY			
52.5999	Business/Information/Computer Technology	3022	Computer Technology
		4001	Administrative Assisting
		3013	Business Information Processing
11.0201	Computer Programming/Programmer, General	3023	Computer Programming
11.0901	Computer Systems Networking and Telecommunications	2414	Computer Networking Fundamentals
15.1202	Computer Technology/Computer Systems Technology	2415	Computer Repair Technology
09.0702	Digital Communications & Media/Multimedia	2425	Visual Communications and Multimedia Design
52.1201	Management Information Systems, General	3013	Business Information Processing
		3022	Computer Technology
		3023	Computer Programming
10.0303	Prepress/Desktop Publishing & Digital Imaging Design	4142	Graphic Communications Technology
		2425	Visual Communications and Multimedia Design
99.9999	Vocational-Technical Education, Other	na	Complete <i>Waiver Request Form</i>
11.0801	Web Page, Digital/Multimedia and Information Resources Design	na	Complete <i>Waiver Request Form</i>
9 - LAW, PUBLIC SAFETY & SECURITY			
43.0107	Criminal Justice/Police Science	3081	Criminal Justice
43.0109	Security & Loss Prevention Services	3081	Criminal Justice
		1480	Protective Services
43.9999	Security and Protective Services, Other	3081	Criminal Justice
		1480	Protective Services

STUDENT OCCUPATIONAL COMPETENCY TESTING IN PENNSYLVANIA

2008-2009 TEST CROSSWALK

List of Secondary CIP Codes and Program Titles Crosswalked to NOCTI Test Numbers and Titles/Other PDE Approved Tests

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<u>CIP CODE</u>	<u>STATE INSTRUCTIONAL TITLE</u>	<u>NOCTI TEST#</u>	<u>TEST TITLE</u>
10 - MANUFACTURING			
48.0703	Cabinetmaking and Millwork/Millwright	2014	Cabinetmaking
15.1304	Civil Drafting & Civil Engineering CAD/CADD	3973	CAD
		4054	Technical Drafting
		3004	Architectural Drafting
15.1301	Drafting and Design Technology/Technician, General	3973	CAD
		3073	CAD/CAM
		3038	General Drafting and Design
		4054	Technical Drafting
15.0303	Electrical, Electronic and Communications Engineering Technology/Technician	3035	Electronic Technology
		2050	Industrial Electricity
		2051	Industrial Electronics
47.0199	Electrical, Electronics Maintenance and Repair Technology, Other	2034	Electronics
		3035	Electronics Technology
15.0403	Electromechanical Technology/Electromechanical Engineering Technology	na	Complete <i>Waiver Request Form</i>
47.0303	Industrial Mechanics and Maintenance Technology	2074	Industrial Maintenance Mechanic
15.0699	Industrial Production Technologies/Technicians, Other	na	Complete <i>Waiver Request Form</i>
48.0501	Machine Tool Technology/Machinist	na	NIMS
48.0503	Machine Shop Technology/Assistant	na	NIMS
48.0599	Precision Metal Working, Other	na	NIMS
48.9999	Precision Production, Other	na	NIMS
48.5999	Production Industries Technology	2084	Manufacturing Technology
48.0506	Sheet Metal Technology/Sheetworking	1067	Sheet Metal
48.0507	Tool & Die Technology/Technician	na	NIMS
48.0303	Upholstery/Upholsterer	1070	Upholstery
48.0508	Welding Technology/Welder	3072	Welding
11 - MARKETING, SALES & SERVICE			
19.0005	Apparel and Textile Marketing Management	2018	Clothing and Textiles Management and Production
47.0108	Appliance Installation and Repair Technology/Technician	na	Complete <i>Waiver Request Form</i>
12.0401	Cosmetology/Cosmetologist, General	2082	Cosmetology
19.0805	Home Furnishings & Equipment Installers	na	Complete <i>Waiver Request Form</i>
47.5999	Mechanics/Installers/Repairers Technology	na	Complete <i>Waiver Request Form</i>
52.1801	Sales, Distribution and Marketing Operations, General	4053	Retail Trades
		2080	Hospitality Management-Lodging
52.1907	Vehicle & Vehicle Parts & Accessories Marketing Operations	4053	Retail Trades
12 - SCIENCE, TECHNOLOGY, ENGINEERING & MATHEMATICS			
26.1201	Biotechnology	na	Complete <i>Waiver Request Form</i>
15.0399	Electrical and Electronic Engineering Technologies/Technicians, Other	2034	Electronics
		3035	Electronics Technology
15.5899	Engineering Technology	2475	Pre-Engineering/Engineering Technology
15.9999	Engineering Technologies/Technicians, Other	2475	Pre-Engineering/Engineering Technology

STUDENT OCCUPATIONAL COMPETENCY TESTING IN PENNSYLVANIA

2008-2009 TEST CROSSWALK

List of Secondary CIP Codes and Program Titles Crosswalked to NOCTI Test Numbers and Titles/Other PDE Approved Tests

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<u>CIP CODE</u>	<u>STATE INSTRUCTIONAL TITLE</u>	<u>NOCTI TEST#</u>	<u>TEST TITLE</u>
13 - TRANSPORTATION, DISTRIBUTION & LOGISTICS			
47.0806	Aircraft Powerplant Technology/Technician	na	Complete <i>Waiver Request Form</i>
47.0803	Autobody/Collision and Repair Technology/Technician	3008	Collision Repair
		2083	Collision Repair/Refinishing Technology
47.0804	Automobile/Automotive Mechanics Technology/Technician	4008	Automotive Technician Advanced
		4109	Automotive Technician Core
47.0805	Diesel Mechanics Technology/Technician	3027	Diesel Engine Mechanics
47.0302	Heavy Equipment Maintenance Technology/Technician	2046	Heavy Equipment Maintenance and Repair
		7569	Highway Construction **SPECIAL PERMISSION REQUIRED
		7572	Heavy Equipment **SPECIAL PERMISSION REQUIRED
52.0203	Logistics and Materials Management	2071	Logistics Technology
47.0899	Vehicle Maintenance & Repair Technologies, Other	3068	Small Engine Repair

Attachment B
State and Local Improvement Plans

**Pennsylvania Perkins Performance Improvement Plan
Submitted to U.S. Department of Education
Office of Vocational and Adult Education**

June 15, 2009

Introduction

The Pennsylvania Department of Education recognizes that the purpose of career and technical education (CTE) is to provide individuals with opportunities throughout their lifetimes to develop, in conjunction with other education and training programs, the knowledge and skills needed to keep Pennsylvania's workforce competitive. To this end, CTE in Pennsylvania must ensure students are engaged in education, which prepares them for careers and postsecondary opportunities, including improved math and literacy skills, relevant industry training that meets workforce needs and enhanced transition to postsecondary opportunities.

The improvement plan of the Pennsylvania Department of Education's Bureau of Career and Technical Education (BCTE) will establish guidance in key policy and practices areas to better address critical issues facing career and technical education in Pennsylvania, including workforce development and academic preparation. The plan establishes a basis for measuring success.

CTE is a vital component of Pennsylvania's PreK-12 education and workforce development systems. CTE has consistently served as a contributor to the economic strength of the Commonwealth and the economic advancement of its residents, and also provides students with the academic foundation to succeed in life as citizens, workers and lifelong learners.

There are 84 career and technical centers, 187 schools and 44 postsecondary institutions offering CTE in Pennsylvania. Across the Commonwealth, there are more than 2,400 secondary approved CTE programs, 1,000 postsecondary CTE programs, and 500 adult CTE programs offered at career and technical centers, colleges, universities and private postsecondary institutions. Combined, these CTE programs educate more than 200,000 individuals statewide.

Perkins IV Requirements

Perkins IV requires that states evidence meeting levels of performance on each core accountability indicator. The regulation requires a state to submit an improvement plan if the state has failed to meet at least 90 percent of an agreed upon local adjusted level of performance for any of the core indicators of performance.

Meeting 90% of Core Performance Indicators

A review of the data submitted for the 2008 Consolidated Annual Report for the 2007-2008 reporting year indicate that Pennsylvania did not meet 90% of the performance levels for 1S1, Academic Achievement Reading (90% of 63 AYP target or 58.5), and 1S2 Academic Achievement Mathematics (90% of 56 AYP target or 50.4).

An examination of LEA data evidences that 43 LEAs of 190 met all performance levels and 131 LEAs did not meet 90% of the 1S2 PSSA Mathematics performance level and 121 LEAs did not meet 90% of the 1S1 PSSA Reading. Of the 190 LEAs, 113 did not meet 90% of the performance levels for both academic indicators. A listing of the LEAs not meeting levels of performance is found in Appendix A.

Of the 190 LEAs, 147 will submit a local improvement plan. The local improvement plan is part of the Perkins local plan submission. The improvement plan requires LEAs to identify the root

cause for not being able to meet at least 90% of the academic indicators and develop strategies that address the root causes.

All Perkins recipients are held to the same criteria when making Adequate Yearly Progress (AYP) determinations; specifically, the criteria include the proportion of students scoring at or above the proficient level in reading and mathematics. Pennsylvania has designated and defined terms to describe student performance (“performance level descriptors”), all of which are discussed in Section 1.3 of the *Pennsylvania Accountability Workbook*. These terms, which were recommended by the Department of Education and approved by the State Board of Education, are: advanced, proficient, basic and below basic. See 22 Pa. Code § 4.51(b)(4). The term “proficient” is defined as “satisfactory academic performance indicating a solid understanding and adequate display of the skills included in Pennsylvania’s Academic Standards.” See *Pennsylvania Accountability Workbook*, Section 1.3.

Every LEA is evaluated annually for AYP, based on a spring testing cycle and the end-of-year graduation and attendance indicators from the previous school year.

Determination of Perkins Underperforming Designation

Schools that do not meet their Perkins and State CTE performance levels receive designations that follow:

- A school that did not meet its performance levels the first year receives a notice. The school is required to develop a two year improvement plan. The school is considered Underperforming. PDE requires a formal response from the school and the completion of an improvement plan that addresses each indicator that was not met. For Perkins recipients, the improvement planning process that must be utilized is found on the egrant system and is part of the local plan submission. For schools that are not Perkins recipients, the secondary improvement planning process follows the PDE developed process for school improvement, Getting Results found at www.pasip.org. The school is also required to participate in the PDE developed Technical Assistance Program.
- A school that did not meet its performance levels for three consecutive years receives fiscal sanctions. The school that has not met performance levels for three consecutive years is considered Most Underperforming. The school in this category will receive notice that the Perkins funding will be withheld, either in whole or in a portion as required by regulation. Additionally, PDE approved program status may be withheld. The school will have the opportunity for a hearing.

Sanctions

Sanctions for failing to: (a) make improvement in meeting the levels of performance; (b) implement an improvement plan or (c) meet at least 90% of an agreed upon local adjusted level of performance for the same indicator of performance for three consecutive years are consistent with Perkins IV. See 44 U.S.C. § 2343.

How Progress on Academic Achievement is Considered to Have Been Met

NCLB requires that every child become proficient in reading and mathematics by 2013-2014, and that all students make continuous and substantial progress. Pennsylvania's accountability system utilizes both the percent of students proficient in reading or mathematics method and the 10% reduction in non-proficient students method, as outlined in the legislation, effective with PDE determination of AYP status for the 2002-2003 school year. Pennsylvania believes it is crucial that progress be measured in a way that is sensitive to academic growth all along the achievement scale. As a result, schools and districts can achieve AYP through an additional safe harbor by meeting their Pennsylvania Performance Index (PPI) targets. PPI is a continuous improvement measure that detects, acknowledges, encourages and rewards changes across the full range and continuum of academic achievement – not limited solely to the proficient level.

AYP Status Confidence Intervals

Excerpt from the *Pennsylvania Accountability Workbook*

Pennsylvania applies confidence intervals to control for volatility due to sampling error in calculating current year performance and Safe Harbor. For current year performance, the Pennsylvania Department of Education uses the standard error of the difference and then uses a simple z-test to see if the observed difference falls outside of the 95% confidence interval. This approach is illustrated as follows¹:

- The hypothesis tested in this case is, “the observed proportion is equal or larger than the target (population) proportion.”

- The formula for the z-test is:
$$z = \frac{p - \pi}{\sqrt{\pi(1 - \pi)/n}}$$

Where π is the population proportion proficient (or in this case, the statewide target for proficiency) and p is the proportion proficient in the school or district.

Safe Harbor Confidence Intervals

For Safe Harbor, the Pennsylvania Department of Education uses the standard error of the difference in proportions. The same general rationale described above governing the use of the standard error prescribes the use of this alternative formula. In this case the controlled error rate is .75.

The approach for applying confidence intervals to Safe Harbor is as follows. P1 is the first observation; P2 is the target given the first observation ($P2 = .9*P1 + 10\%$), i.e., the reduction of the non-proficient students by 10%. The formula for calculating the standard error then is $SE = \sqrt{P1*(100-P1)/n + P2*(100-P2)/n}$.

For example, school X enrolled 550 students in Year 1 and had 20% of its students performing in Reading at Proficient and Advanced, and in Year 2 enrolled 580 students and had 23% of its

¹ For purposes of this procedure, an approximate standard error calculation will be used. Obviously, if the sample is small, the exact method should be used.

students performing at Proficient and Advanced in Reading. Using the formula above ($P_2 = .9 * P_1 + 10\%$), $P_2 = .9 * 20 + 10 = 28$.

To calculate the standard error of this difference, we take the square root of $((20 * 80) / 550) + ((28 * 72) / 580)$. This equals the square root of $(2.91 + 3.48)$, or 2.53. We then must adjust the error rate by the appropriate z-score or .68. We take 2.53 and multiply it by .68 (= 1.72). We add 1.72 to 23 (24.72) and compare this value to the target ($P_2 = 28$). Since 24.72 is less than the target (28), we can say with confidence that the AYP relative growth criterion has not been met by school X.

Note that this process is applied to all measurable subgroups and for Reading and Mathematics separately.

Pennsylvania State Perkins IV Improvement Plan

The state is underperforming on two indicators, 1S1, academic achievement-reading and 1S2, academic achievement-mathematics. In 2007, the Pennsylvania Department of Education developed a strategic plan to address career and technical education student academic achievement. The two goals of the strategic plan and for the Pennsylvania Perkins improvement plan are to:

1. Increase Academic Achievement for all CTE Students
2. Improve Special Education Students' Academic Achievement and Success

This improvement plan required by Perkins IV is built upon the existing BCTE strategic plan. Presented in this document are goals applicable to 1S1 and 1S2.

Goals

Academic rigor

By 2010, 100% of the schools will have accurately coded CTE students.

By 2010, stakeholders will be better equipped to use of PSSA scores to make instructional decisions.

To meet 100% student proficiency by 2014, the percentage of CTE students scoring proficient or advanced in PSSA math and reading will annually increase 10.2% in reading and 11.5% in math.

The CAR data evidences the following:

16,673 concentrators took the PSSA Reading. Only 43.6% CTE concentrators were proficient and advanced in Reading on the 2007 PSSA assessment.

16,705 concentrators took the PSSA Math. Only 31.6% CTE concentrators were proficient and advanced in Math on the 2007 PSSA assessment.

There were a large proportion of special populations CTE student concentrators. This group of concentrators did poorly as a whole.

Students with Disability

4,068 concentrators with disabilities or 13.5% in this category were proficient and advanced in Reading.

4,079 concentrators with disabilities or 9.3% in this category were proficient and advanced in Math.

Limited English Proficient

189 concentrators of limited English proficiency or 11.7% in this category were proficient and advanced in Reading.

190 concentrators of limited English proficiency or 22.6% in this category were proficient and advanced in Math.

Economically Disadvantaged

5,637 economically disadvantaged concentrators or 33% in this category were proficient and advanced in Reading.

5,658 economically disadvantaged concentrators or 23% in this category were proficient and advanced in Math.

From Ethnicity grouping, Blacks and Hispanics performed at 26.4% and 26.5% proficient and advanced respectively on Reading. Even the largest group, Whites, 12,842 were tested and 48.4% were proficient and advanced in Reading and 12,857 or 34.9% were proficient and advanced in Math. (See appendix H)

Root Cause Analysis

The Pennsylvania Department of Education has reviewed the 2008 CAR data and NCLB data and based on annual approved program evaluation visits and Perkins IV monitoring and technical assistance visits has reached conclusions on the level of performance for 1S1 and 1S2.

Grade level preparation

The data evidence that statewide, eighth grade students perform at grade level on the state academic assessment however there is a decrease in the level of proficiency at the eleventh grade. The impact of underperforming academic levels is students enrolling in career and technical education are underprepared and not at grade level. It is not uncommon to find students enrolling in the career and technical education programs who are performing at the third and fifth grade level.

Coursework

Upon examination of the academic coursework during the approved program evaluation visits and as career and technical education programs are being approved, it is evident that the career and technical education students' academic course taking pattern is not always at grade level or in a sequence that is aligned to the Pennsylvania grade 11 academic eligible content.

Guidance services

Examination of student transcripts and guidance services during the approved program evaluation visits evidence that guidance services are not always in place. The guidance services between the career and technical center and the sending school district typically are not aligned.

Joint planning

The approved program evaluations also evidence that the joint planning that is regulated between the career and technical centers and the sending school districts is not occurring at a level that would address appropriate academic preparation and support to bring CTE students to grade level.

Teacher and administrator preparation

The approved program evaluations evidence that career and technical education instructors are not trained on academic integration or in addressing special education needs. Additionally, administrators are not prepared to think and plan strategically, create an organizational vision around personalized student success, utilize data and create a culture of teaching and learning.

Action Steps	Staff Member	Timeline
Grade level preparation		
Review course taking patterns at select CTCs and their sending districts. Work involves the Education Trust.	K.C. Simchock	2009 to 2013
Establish culture of high expectations for career and technical education students. Work involves the Southern Regional Education Board and resiliency training.	K.C. Simchock	2009 to 2013
Develop CTE and school district publications to assist with special education.	Frank DiNatale	2009 to 2013
Develop training module that is focused on the CTC and sending district relationship. The module will cover developing clear policies and practices that support the student with the IEP, the CTC and the sending school. Pilot the module within the southeast region with wider dissemination in 2009-2010.	Frank DiNatale	2009 to 2013
Coursework		
Develop programs of study (academic and technical scope and sequence included).	K.C. Simchock and Lydia Hess	2009 to 2013
Identify grade level academic eligible content for each program of study.	K.C. Simchock	2009 to 2013
Develop model curriculum development process. (Appendix B)	Lee Burket	2009 to 2013
Encourage common curriculum at CTC sending districts. Work involves the Education Trust.	K.C. Simchock	2009 to 2013
Develop academic integration professional development for CTE instructors.	K.C. Simchock	2009 to 2013
Establish model urban reform efforts for two CTCs by including as Cohort II Schools.	Frank DiNatale and Vince Safran	2009 to 2013

Guidance services		
Develop an effective and comprehensive guidance and advisement system. Work involves the Southern Regional Education Board.	K.C. Simchock	2009 to 2013
Joint planning		
Align approved program evaluations and Perkins reviews and provide common message and ensure state regulation is followed.	Frank DiNatale and Vince Safran	2009 to 2013
Teacher and administrator preparation		
Establish a Career and Technical Distinguished School Leader program.	Lee Burket	2009 to 2013
Establish Pennsylvania Inspired Leadership Programs.	Lee Burket	2009 to 2013
Establish a school improvement planning process building upon existing Pennsylvania Department of Education efforts.	Lee Burket	2009 to 2013
Revise career and technical instructional teacher pre and in-service programs.	K.C. Simchock	2009 to 2013

Assistance for Schools Not Making Perkins and State CTE Accountability Measure Targets

BCTE provides assistance for schools that have failed to meet Perkins and State Accountability Measure targets in a given year. Schools that fail to meet Perkins and State Accountability Measure targets are placed in a school improvement cycle. After three consecutive years of not meeting targets, schools are given notice and an opportunity for a hearing, PDE approved program status is withheld and, if applicable, the Perkins total allocation is withheld or a portion of the allocation is withheld.

The assistance provided by BCTE includes school improvement planning guidance and sustained technical assistance. The Pennsylvania Department of Education has implemented initiatives to provide support to underperforming schools. The Technical Assistance Program (TAP) was designed to address the educational system and identify gaps between the educational system and student success. The TAP includes the following activities. A full description is found in the appendices.

Southern Regional Education Board (SREB) (Appendix C)

Implementation of the Technical Centers That Work model include:

1. Technical Assistance Visits led by national leaders serving as consultants to SREB.
2. Site development workshops for each center that requires each center to form a leadership team that attends the SREB training and develops a school improvement plan.
3. Use of the TCTW assessment data that is derived from a NAEP aligned assessment, teacher and student surveys. This involves the teams participating in two day workshop.
4. Literacy training for school leaders. This workshop requires teachers to integrate reading and writing for learning into their curriculum and instructional processes. This involves a two day workshop for leaders from each of the centers.
5. Numeracy training for instructors. This involves six days of training over three separate workshops. Onsite visits by SREB staff will occur at the CTCs. The visits are then followed by additional training.
6. Guidance services planning for guidance counselors.

EdTrust (Appendix D)

The Education Trust will provide an embedded professional development package for the schools. The teams will consist of a minimum of four members: the CTC principal/director, CTC school counselor, CTC teacher and a school counselor from a sending school. The professional development will teach the teams data-driven, decision-making model that will facilitate a thoughtful review of the policies, practices, attitudes and structure that will lead to an effective action plan designed to raise student achievement. The training will teach participants how to analyze the existing multitude of data that exists. In addition, teams will learn how to analyze student transcripts and master schedule to uncover choke points and environmental barriers to high academic achievement for all students.

Pennsylvania Inspired Leadership (PIL) through Pennsylvania Association for Career and Technical Administrators (PACTA) (Appendix E)

The Pennsylvania Inspired Leadership (PIL) Program is a statewide, standards-based continuing professional education program for school and system leaders. The comprehensive, cohort-based program is focused on developing the capacity of leaders to improve student achievement. The program is based on: 1) a comprehensive curriculum developed by the National Institute for

School Leadership (NISL) and 2) a PA-adapted version of the Total Leaders curriculum developed by the Pennsylvania School Leadership Council (PLDC).

Research demonstrates that effective school leaders have an impact on student achievement. A focused program of continuing professional education can help leaders develop the knowledge and skills they need to become more effective in improving the learning environment for teachers and students. These professional education activities are focused on practices that have the greatest impact on improving student achievement.

Core Standards:

1. The leader has the knowledge and skills to think and plan strategically, creating an organizational vision around personalized student success.
2. The leader has an understanding of standards-based systems theory and design and the ability to transfer that knowledge to the leader's job as the architect of standards-based reform in the school.
3. The leader has the ability to access and use appropriate data to inform decision-making at all levels of the system.

Corollary Standards:

1. The leader knows how to create a culture of teaching and learning with an emphasis on learning.
2. The leader knows how to manage resources for effective results.
3. The leader knows how to collaborate, communicate, engage and empower others inside and outside of the organization to pursue excellence in learning.
4. The leader knows how to operate in a fair and equitable manner with personal and professional integrity.
5. The leader knows how to advocate for children and public education in the larger political, social, economic, legal and cultural context.
6. The leader knows how to support professional growth of self and others through practice and inquiry.

PACTA has developed three PIL programs. The approval is for the use of data-driven, decision-making to increase the (a) occupational competency, (b) technical competency achievement of career and technical students and (c) strategies to use for special needs students to increase academic achievement.

CTDSL Program (Appendix F)

A Career and Technical Distinguished School Leader program has been developed. The CTDSL will be assigned to work with career and technical centers and the sending districts.

The role of the Career and Technical Distinguished School Leaders (CTDSL) is to provide targeted assistance to the CTCs to improve student achievement on the 11th grade PSSA math/reading assessment and to improve student achievement on end-of-course occupational assessments. Generally, the end of course occupational assessments are developed by NOCTI. CTDSLs will work directly with CTC administrators and staff to craft a multi-year strategy that incorporates systemic change with the sole focus on improving achievement. CTDSLs will offer assistance and guidance to the CTC administrative team on all aspects of the CTCs operation and redirect all efforts and priorities on improving student performance on PSSA and NOCTI assessments.

Literacy Training (Appendix G)

MAX Teaching. This training experience is focused on “Using Literacy Skills to Help Students Learn Subject Matter.” The strategies provide teachers with opportunities to enhance student achievement.

Curriculum Assistance (Appendix H)

This activity reviews a comprehensive model that includes numerous planning and decision making steps, curriculum products, instructional strategies and instructor observation forms and strategies. The model does not replace reform initiatives such as SREB or Learning Focused Schools, but clarifies how the reforms can fit into the school’s overall plan for improvement. The review provides the school’s administrative team with an opportunity to make comparisons and formulate appropriate decisions.

Appendix A
LEAs not meeting 90% of
1S1, Academic Attainment Reading and
1S2, Academic Attainment Mathematics
2008 CAR Data
2006-2007 PSSA Results for 2008 Concentrators

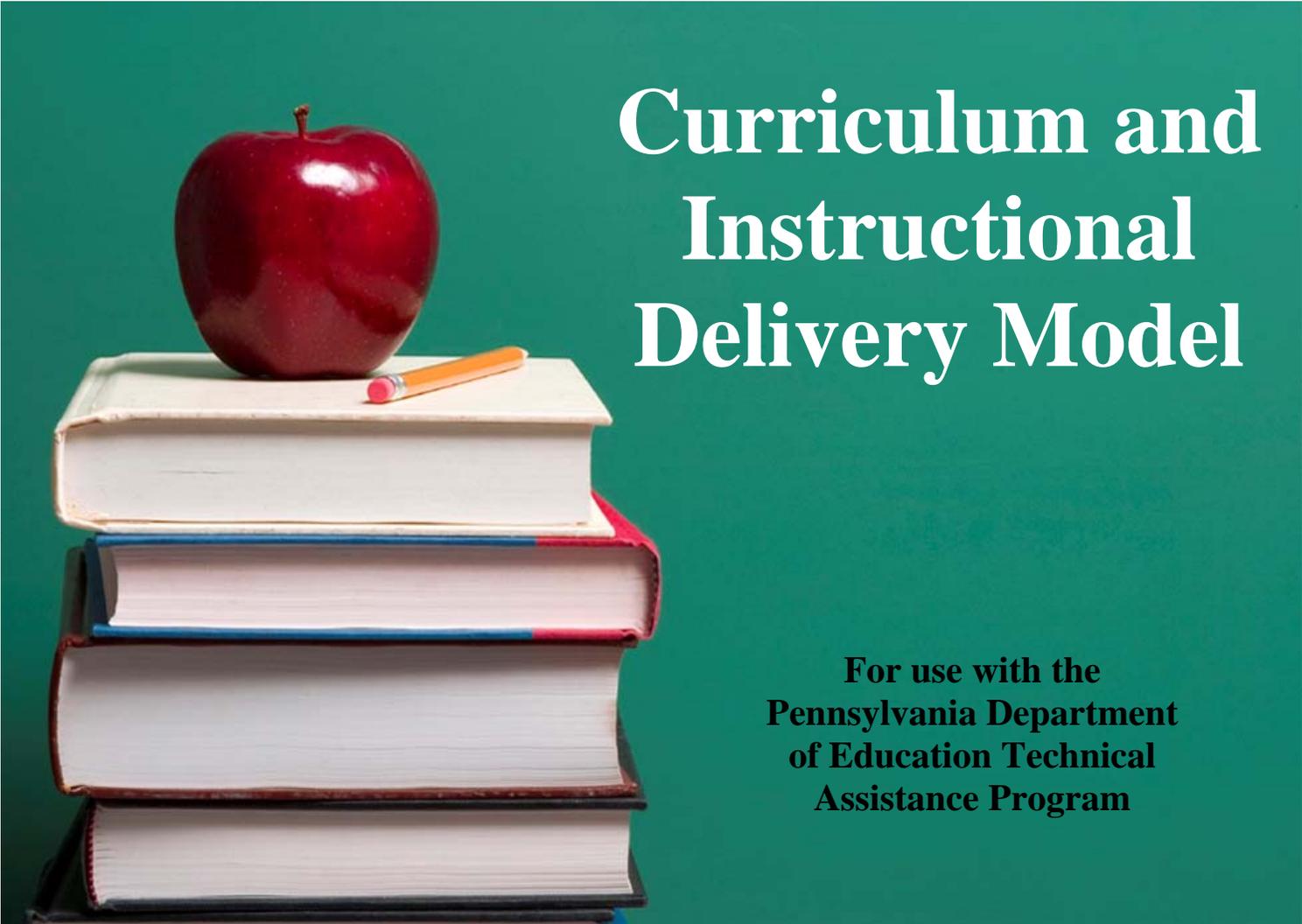
LEA			Below 90%	Below 90%	Below 90%
Perkins recipient in bold			NCLB 63%	NCLB 56%	
Consortium Members are in Plain Text	PCT Reading	PCT Math	1S1 Reading	1S2 Math	Both
			56.7	50.4	
A W Beattie Career Center	39.88	26.29	Y	Y	Y
Admiral Peary AVTS	35.24	25.71	Y	Y	Y
Altoona Area SD	67.53	40.26		Y	
Athens Area SD	40.00	40.00	Y	Y	Y
Bald Eagle Area SD	85.71	78.57			
Bangor Area SD	80.00	80.00			
Beaver County CTC	45.05	25.82	Y	Y	Y
Bedford County Technical Center	61.15	47.14		Y	
Bellwood-Antis SD	33.33	33.33	Y	Y	Y
Benton Area SD	42.86	28.57	Y	Y	Y
Berks CTC	43.82	33.33	Y	Y	Y
Berlin Brothersvalley SD	85.71	71.43			
Bermudian Springs SD	71.11	53.33			
Berwick Area SD	70.37	29.63		Y	
Bethel Park SD	82.98	64.52			
Bethlehem Area SD	63.24	61.76			
Bethlehem AVTS	24.31	18.35	Y	Y	Y
Big Spring SD	0.00	0.00	Y	Y	Y
Blackhawk SD	16.67	16.67	Y	Y	Y
Bradford Area SD	65.17	53.93			
Brockway Area SD	0.00	0.00	Y	Y	Y
Bucks County Technical High School	67.09	51.76			
Butler County AVTS	49.01	40.40	Y	Y	Y
Canton Area SD	50.00	50.00	Y	Y	Y
Carbon Career and Technical Institute	33.33	21.21	Y	Y	Y
Career Institute of Technology	29.17	15.48	Y	Y	Y
Carlisle Area SD	44.44	26.39	Y	Y	Y
Center for Arts and Technology	36.91	25.25	Y	Y	Y
Central Columbia SD	48.15	40.74	Y	Y	Y
Central Greene SD	75.00	50.00		Y	
Central Montco Technical High School	32.54	30.16	Y	Y	Y
Central PA Institute of Science and Technology	45.52	28.36	Y	Y	Y
Central Westmoreland CTC	46.88	26.56	Y	Y	Y
Chambersburg Area SD	84.91	67.92			
Chester-Upland SD	7.84	1.96	Y	Y	Y
Chestnut Ridge SD	57.89	52.63			
Clarion County Career Center	34.91	22.64	Y	Y	Y

Clearfield Area SD	100.00	0.00		Y	
Clearfield County CTC	42.57	29.73	Y	Y	Y
Columbia-Montour AVTS	45.70	41.06	Y	Y	Y
Conewago Valley SD	53.33	40.00	Y	Y	Y
Conneaut SD	50.00	42.86	Y	Y	Y
Connellsville Area Career and Technical Center	45.16	12.90	Y	Y	Y
Corry Area SD	46.51	34.88	Y	Y	Y
Coudersport Area SD	55.56	55.56	Y		
Crawford County CTC	53.80	35.33	Y	Y	Y
Crestwood SD	71.43	57.14			
CTC of Lackawanna County	41.29	18.71	Y	Y	Y
Cumberland-Perry AVTS	37.70	20.73	Y	Y	Y
Danville Area SD	76.27	55.93			
Dauphin County AVTS	46.07	29.78	Y	Y	Y
Deer Lakes SD	57.14	57.14			
Derry Area SD	44.44	27.78	Y	Y	Y
Dover Area SD	72.22	52.78			
East Stroudsburg Area SD	0.00	0.00	Y	Y	Y
Eastern Center for Arts and Technology	43.36	28.67	Y	Y	Y
Eastern Lancaster County SD	72.22	69.44			
Eastern Westmoreland CTC	52.83	31.13	Y	Y	Y
Easton Area SD	56.39	51.88	Y		
Elizabethtown Area SD	77.78	77.78			
Ephrata Area SD	50.00	83.33	Y		
Erie City SD	61.06	51.75			
Erie County Technical School	56.67	37.08		Y	
Fairfield Area SD	72.22	38.89		Y	
Fayette County AVTS	31.37	13.59	Y	Y	Y
Forbes Road CTC	38.19	23.97	Y	Y	Y
Fort Cherry SD	50.00	50.00	Y	Y	Y
Franklin County CTC	40.89	32.51	Y	Y	Y
Freedom Area SD	83.33	100.00			
Freeport Area SD	100.00	100.00			
Fulton County AVTS	61.54	42.31		Y	
Gettysburg Area SD	51.72	30.00	Y	Y	Y
Greater Altoona CTC	46.61	42.55	Y	Y	Y
Greater Johnstown AVTS	30.21	21.88	Y	Y	Y
Greater Johnstown SD	67.21	56.56			
Greene County CTC	22.73	11.24	Y	Y	Y
Greenwood SD	50.00	50.00	Y	Y	Y
Harrisburg City SD	24.10	7.23	Y	Y	Y
Highlands SD	57.69	42.31		Y	
Huntingdon Area SD	40.00	40.00	Y	Y	Y
Huntingdon Co CTC	26.32	21.05	Y	Y	Y
Indiana County Technology Center	55.56	42.06	Y	Y	Y
Jefferson County-DuBois AVTS	45.33	38.16	Y	Y	Y
Jersey Shore Area SD	61.63	51.16			
Johnsonburg Area SD	50.00	20.00	Y	Y	Y

Juniata County SD	42.22	28.89	Y	Y	Y
Kane Area SD	41.67	41.67	Y	Y	Y
Keystone Central CTC	44.74	42.11	Y	Y	Y
Lackawanna Trail SD	50.00	16.67	Y	Y	Y
Lancaster County CTC	39.32	33.52	Y	Y	Y
Lancaster SD	34.44	26.37	Y	Y	Y
Laurel SD	60.00	60.00			
Lawrence County CTC	21.05	9.47	Y	Y	Y
Lebanon County CTC	41.29	33.33	Y	Y	Y
Lehigh Career and Technical Institute	34.66	24.21	Y	Y	Y
Lenape Tech	45.18	26.90	Y	Y	Y
Littlestown Area SD	79.76	55.95			
Lycoming CTC	52.94	44.12	Y	Y	Y
Manheim Central SD	50.00	50.00	Y	Y	Y
Marion Center Area SD	28.57	57.14	Y		
Math Sci and Tech Community CS	33.33	66.67	Y		
McGuffey SD	62.50	56.25			
McKeesport Area Tech Ctr	20.99	11.11	Y	Y	Y
Mercer County Career Center	37.28	22.94	Y	Y	Y
Meyersdale Area SD	0.00	0.00	Y	Y	Y
Middle Bucks Institute of Technology	55.61	48.66	Y	Y	Y
Midd-West SD	100.00	100.00			
Mifflinburg Area SD	50.00	0.00	Y	Y	Y
Mifflin-Juniata CTC	36.26	17.58	Y	Y	Y
Milton Area SD	21.74	30.43	Y	Y	Y
Mohawk Area SD	80.95	47.62		Y	
Mon Valley CTC	39.29	19.05	Y	Y	Y
Monroe Career and Technical Institute	45.15	30.10	Y	Y	Y
Montgomery Area SD	73.47	60.42			
Mount Union Area SD	100.00	60.00			
Norristown Area SD	0.00	33.33	Y	Y	Y
North Montco Tech Career Center	51.50	37.31	Y	Y	Y
Northern Bedford County SD	57.69	38.46		Y	
Northern Potter SD	54.55	72.73	Y		
Northern Tier Career Center	31.16	24.64	Y	Y	Y
Northern Tioga SD	44.44	44.44	Y	Y	Y
Northern Westmoreland CTC	47.12	25.00	Y	Y	Y
Northern York County SD	66.67	66.67			
Northumberland County CTC	41.79	8.82	Y	Y	Y
Northwestern SD	64.71	35.29		Y	
Octorara Area SD	33.33	30.95	Y	Y	Y
Oley Valley SD	83.33	33.33		Y	
Parkway West CTC	47.83	27.33	Y	Y	Y
Penn Manor SD	91.67	66.67			
Penns Manor Area SD	62.50	62.50			
Philadelphia City SD	28.41	22.75	Y	Y	Y
Pittsburgh SD	54.90	46.12	Y	Y	Y
Pleasant Valley SD	100.00	70.00			
Pottstown SD	54.72	42.45	Y	Y	Y

Reading Muhlenberg CTC	30.64	15.03	Y	Y	Y
Ridgway Area SD	0.00	0.00	Y	Y	Y
Ridley SD	24.24	33.33	Y	Y	Y
Saint Marys Area SD	53.45	32.76	Y	Y	Y
Salisbury-Elk Lick SD	60.00	60.00			
Schuylkill Technology Centers	31.46	18.44	Y	Y	Y
Selinsgrove Area SD	0.00	0.00	Y	Y	Y
Seneca Highlands AVTS	44.59	25.68	Y	Y	Y
Shaler Area SD	55.17	34.48	Y	Y	Y
Solanco SD	78.57	71.43			
Somerset Area SD	0.00	0.00	Y	Y	Y
Somerset County Technology Center	38.83	25.00	Y	Y	Y
Southern Huntingdon County SD	31.58	15.79	Y	Y	Y
Spring Cove SD	53.33	60.00	Y		
Steel Center AVTS	39.46	20.13	Y	Y	Y
SUN Area CTC	51.09	27.95	Y	Y	Y
Susquehanna County CTC	36.07	16.39	Y	Y	Y
Titusville Area SD	73.68	52.63			
Tri-Valley SD	85.71	85.71			
Tulpehocken Area SD	100.00	75.00			
Tunkhannock Area SD	62.50	65.63			
Tussey Mountain SD	35.90	20.51	Y	Y	Y
Twin Valley SD	85.19	74.07			
Tyrone Area SD	68.29	41.46		Y	
United SD	55.56	33.33	Y	Y	Y
Upper Adams SD	0.00	0.00	Y	Y	Y
Upper Bucks County AVTS	51.85	39.26	Y	Y	Y
Upper Darby SD	62.07	48.86		Y	
Upper Dauphin Area SD	36.00	48.00	Y	Y	Y
Venango Technology Center	39.26	16.30	Y	Y	Y
Wallenpaupack Area SD	73.33	63.33			
Warren County AVTS	61.05	48.42		Y	
Warwick SD	63.64	36.36		Y	
Wayne Highlands SD	100.00	66.67			
Wellsboro Area SD	47.62	33.33	Y	Y	Y
West Mifflin Area SD	0.00	100.00	Y		
West Side CTC	38.89	17.39	Y	Y	Y
Western Area CTC	33.06	11.67	Y	Y	Y
Western Center for Technical Studies	27.03	12.61	Y	Y	Y
Western Wayne SD	50.00	0.00	Y	Y	Y
Wilkes-Barre CTC	27.85	12.66	Y	Y	Y
Williamsburg Community SD	100.00	100.00			
Williamsport Area SD	65.22	54.35			
Wilmington Area SD	37.50	37.50	Y	Y	Y
Wyalusing Area SD	60.00	40.00		Y	
Wyoming Valley West SD	71.43	71.43			

**Pennsylvania Department of Education
Bureau of Career and Technical Education**



Curriculum and Instructional Delivery Model

**For use with the
Pennsylvania Department
of Education Technical
Assistance Program**

May, 2009

Commonwealth of Pennsylvania
Edward G. Rendell, Governor

Department of Education
Gerald L. Zahorchak, Secretary

Office of Elementary and Secondary Education
Diane Castelbuono, Deputy Secretary

Bureau of Career and Technical Education
Lee Burket, Director

Division of Professional Development and Support Services
Katherine Simchock, Manager

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Pennsylvania Department of Education
333 Market Street
Harrisburg, PA 17126-0333

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Harrisburg, PA 17126-0333
Voice Telephone: (717) 783-3750
Text Telephone: (717) 783-8445
Fax: (717) 783-6802

Curriculum and Instructional Delivery Model

Introduction

The International Center for Leadership in Education has emphasized that the new economy requires that employees be able to apply and transfer math, science and technical reading and writing skills to any number of job competencies. This emphasis is shared by other reform initiatives including the Southern Regional Education Board's *Technology Centers That Work*.

Career and technical education programs must be designed to teach transferable skills. Learning must be industry specific enough to enable students to develop employment skills without being so specific as to force students into narrowly focused or dead-end jobs. To accomplish this the programs must be planned, organized and delivered based on a strong academic foundation in essential skills including reading, communicating, math and science. The International Center also emphasizes the need to focus on teaching students the process of applying knowledge rather than continuing the narrow approach of concentrating on specific applications of knowledge for specific tasks.

The planning, organization and delivery of curriculum and instructional strategies to accomplish this major reform initiative is considerable. A curriculum development and instructional delivery model is essential to document the school's philosophy, focus and strategy to improve student achievement.

Objectives:

- Identify the need for a system-wide curriculum development and instructional delivery model.
- Identify common steps included in a curriculum development and instructional delivery model.
- Recognize the importance of research-based instructional delivery strategies that improve student achievement. Identify where those strategies are included in a curriculum model.
- Recognize the commitment in staff development necessary to develop, implement and monitor a system-wide curriculum model to improve student achievement.
- Identify the administrative observation and evaluation descriptors and processes necessary to achieve system-wide implementation and increased student achievement.

CURRICULUM AND INSTRUCTIONAL DELIVERY MODEL

Curriculum Development and Instructional Delivery Steps	Clarifying Statements	Examples, Resources and Exhibits
<p>1. Identify labor market need for the curriculum.</p> <p>Resulting Product(s):</p> <ul style="list-style-type: none"> • Occupational Advisory Committee* minutes document validation of labor market data to support the curriculum. • CTC or High School records document the authority to provide PA recognized industry-based credentials or certifications*. 	<p>Employment openings must exist for students upon graduation or after they attend further schooling.</p> <p>Employment openings are identified from state or local research.</p> <p>The content, scope and sequence of the curriculum must lead to attainment of PA recognized industry-based credentials or certifications*.</p>	<p>State Research Examples:</p> <ul style="list-style-type: none"> • PDE High Priority Occupations* • CareerLink • Workforce Investment Board (WIB) • State Trade Associations <p>Local Research Examples:</p> <ul style="list-style-type: none"> • CTC study • Occupational Advisory Committee* • Local Trade Associations • Chambers of Commerce • Local WIB <p>BCTE Website Resource: PA Recognized Industry-Based Credentials or Certifications*</p> <p>Certification Examples:</p> <ul style="list-style-type: none"> • NIMS • AYES/NATEF • CISCO • MICROSOFT

<p>2. Identify occupations included in the curriculum.</p> <p>Resulting Product(s):</p> <p>Career Objective Form (PDE-408 or equivalent) listing the occupations included in the curriculum.</p> <p>Competency list crosswalked to occupations.</p>	<p>Occupations must reflect the labor market openings that are available upon graduation or after further schooling.</p> <p>The occupations align with PDE Approved SOC and CIP Codes* and are listed on the student career objective form required by BCTE.</p> <p>Occupations included in the curriculum can be listed on competency lists or recruitment materials.</p>	<p>Exhibit: Career Objective Form (PDE-408 or equivalent)</p> <p>Exhibit: Task List (PDE Program of Study or equivalent)</p>
<p>3. Identify competencies that will be covered in the curriculum and condense when possible.</p> <p>Resulting Products:</p> <ul style="list-style-type: none"> • CTC or High School records document the use of a Valid Occupational Analysis* which has been cross walked to the competency list. 	<p>Technical competencies are processes that must be carried out to complete a major workplace activity. They include the things a worker must know, understand, and be able to do; the cognitive processes they must follow to make decisions; and the personal skill they must possess. (SREB)</p> <p>Utilize a Valid Occupational Analysis* to identify the competencies required for the occupations included in the curriculum.</p> <p>Keep competency list brief. Combine and condense when possible.</p>	<p>Valid Occupational Analysis Examples:</p> <ul style="list-style-type: none"> • PDE Programs of Study • NIMS • ASE • CISCO • MICROSOFT • NOCTI • O*NET • V-TECS • MAVCC • University Products • Craft Advisory Committee <p>Examples of Competencies:</p> <ul style="list-style-type: none"> • Use hand and power tools

<p>Note: Administrative decisions must be made to focus the instructional philosophy for the school. The philosophy will impact the selection of competencies discussed above and the corresponding learning experiences designed to teach the competencies.</p> <p>Will the school emphasize literacy as an integral component of each skill competency?</p> <p>Will the school emphasize higher level objectives: analysis, synthesis, evaluation, to prepare learners for the expanded roles of the workplace?</p>	<p>A vocational competency should not be confused with a procedure which is a smaller unit of work which supports the competency.</p> <p>Include the procedures as steps in the lesson which are documented on the lesson plan or competency guide.</p> <p>Major reform initiatives such as SREB provide a project driven curriculum based on goals that emphasize increased focus on thinking, planning and problem solving skills.</p> <p>Curriculum development and instructional delivery decisions need to be made to define the extent to which reform will be implemented. Will the entire reform model be implemented or will key practices be incorporated to enrich existing programs?</p> <p>Resulting Products:</p> <ul style="list-style-type: none"> • CTE competency lists that reflect a blending of academic, technical, thinking and personal skills. 	<ul style="list-style-type: none"> • Identify and compare the advantages of various types of construction materials • Cut and weld pieces of metal stock. <p>Resources:</p> <p><i>A Guide to Preparing a Syllabus, Designing Challenging Vocational Courses, SREB</i></p> <p><i>Planning for Improved Student Achievement, Ten Steps for Planning and Writing Standards-Based Units, SREB</i></p>
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<p>4. Prepare the competency list; group related competencies into major topic areas.</p> <p>Resulting Product(s):</p> <p>Competency list organized by major topics that reflect Scope and Sequence* required to obtain the National/State credential, obtain employment or pursue further education.</p>	<p>Major Topic Areas or Major Units* describe groups of related competencies.</p> <p>If possible, the competencies under each topic area should be arranged in a sequence similar to a real employment situation and the order in which they will be taught.</p> <p>The Major Units* define the Scope and Sequence* requested by BCTE for Program Approval and Programs of Study documentation.</p> <p>The competency list can be utilized for periodic updating of student progress as well as documentation of graduation requirements.</p> <p>Individual competencies or groups of competencies are identified on lesson plans or competency guides which provide information required to teach the competency.</p>	<p>Examples of Major Units and Competencies:</p> <ul style="list-style-type: none"> • Curriculum - Carpentry • Major Unit - Roof Coverings • Competencies <ul style="list-style-type: none"> - Install felt paper - Apply shingles
<p>5. Secure occupational advisory committee and BCTE approval for the curriculum.</p> <p>Resulting Products:</p> <ul style="list-style-type: none"> • Occupational Advisory Committee minutes and PDE Program Approval records. • PDE Programs of Study Documentation. 	<p>The Pennsylvania Department of Education must approve the curriculum as part of the PDE CATS Program Approval System.</p> <p>The Occupational Advisory Committee must review the competency list and verify their approval in writing in the minutes of all appropriate meetings.</p>	

<p>6. Analyze each competency to identify the industry performance standards required by the occupation.</p> <p>Resulting Products:</p> <ul style="list-style-type: none"> • Measurable performance standards for each competency. 	<p>Performance standards are precise statements that describe how well the competency must be performed to match industry requirements.</p> <p>Performance standards should be obtained from valid occupational analysis material.</p> <ul style="list-style-type: none"> • NIMS • ASE • CISCO • MICROSOFT • NOCTI • O*NET • MAVCC • University curriculum materials • State curriculum materials • Occupational Advisory Committee input <p>Performance standards are listed on the lesson plan or competency guide to evaluate student ability to perform the competency. Performance standards are usually part of the “performance objective” or included in a “performance checklist”.</p> <p>Instructors must utilize Performance Standards* to evaluate student ability prior to grading students.</p>	<p>Examples:</p> <ul style="list-style-type: none"> • Listing of specific sequence and number of assembly steps. • Specific measurement tolerances (1/4 inch, 45 degrees). • Listing of specific operating steps. • Assembly is square and plumb. • Specific preparation steps. • No drops or runs. • No burrs.
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<p>7. Review RESEARCH-BASED INSTRUCTIONAL DELIVERY STRATEGIES prior to planning instruction or preparing lesson plans / materials.</p>	<p>Extensive research has identified instructional delivery strategies that improve student achievement across content areas and across all grade levels.</p> <p>The Pennsylvania Department of Education <i>Teaching Matters</i> initiative identifies “Universal Instructional Design Principles” with proven effectiveness.</p> <p>The Bureau of Career and Technical Education’s Technical Assistance Program includes the Technology Centers That Work (TCTW) model from the Southern Regional Educational Board (SREB). This initiative identifies research-proven strategies for planning and writing standards-based lessons.</p> <p>Additional research and resources are available, including MAXTeaching, Robert Marzano and Madeline Hunter.</p> <p>Minor differences between reform initiatives are evident; however, their similarities provide confidence that student performance can be significantly improved no matter what initiative is followed.</p> <p>Brief descriptions of some of the strategies follow; however, the list is not complete nor is it sufficiently detailed. Additional research, staff development and administrative oversight will be necessary to implement effective changes.</p>	<p>Resources: PA Department of Education</p> <p>SREB</p>
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INSTRUCTIONAL DELIVERY STRATEGIES

Direct Instruction (Explicit Instruction)		
<p>Resulting Products</p> <ul style="list-style-type: none"> Administrative observations of teacher classroom performance indicate planning (Lesson Plans, Competency Guides, Instructional Materials) that include evidence of DIRECT INSTRUCTION elements and the teacher’s instructional delivery indicates implementation. <p>Look For(s)</p> <ul style="list-style-type: none"> Objectives and standards have been clearly communicated to students. Anticipatory set strategies to focus students on the lesson are implemented at the beginning of each lesson. Teacher provides sufficient input to accomplish the objectives. Teacher models the learning, in small steps and visible by each student. Teacher frequently checks for understanding by questions, choral response, response cards, etc. Teacher implements guided practice by supervising each student in the 	<p>A. <u>Objectives</u> – Precise statements defining what the student will understand, be able to do, or care about, as a result of instruction.</p> <p>B. <u>Standards</u> – Precise statements defining what skills or knowledge are to be demonstrated (measurable indicators).</p> <p>C. <u>Anticipatory Set</u> – The teacher will focus the students’ attention on the lesson (purpose / importance).</p> <p>Teacher’s actions or statements that relate student experiences or prior learning.</p> <p>Create an organizing framework for the lesson (advance organizer).</p> <p>Improve understanding through the use of examples or analogy.</p> <p>D. <u>Input</u> – The teaching/presentation component that provides the information needed for students to gain the knowledge or skill. The input can be delivered, through lecture, computer, AV, small group instruction, role play, simulation, etc.</p> <p>E. <u>Modeling</u> – This component is called “I Do”. Once the information (input) has been presented, the teacher uses it to show students examples of what is expected as</p>	<p>Resources:</p> <p>Madeline Hunter Direct Instruction Model</p> <p>PDE <i>Teaching Matters</i> DVD</p> <p>Bloom’s Taxonomy of Educational Objectives</p> <p>Modeling Examples:</p> <ul style="list-style-type: none"> Solving a math problem Operating a machine Taking blood pressure

<p>performance of the skill or demonstration of the knowledge.</p> <ul style="list-style-type: none"> • Lesson is reviewed through a closure strategy – summary. • Independent practice assigned. 	<p>an end product of their work. (The teacher models the learning – demonstrates use of the knowledge or performance of the skill.)</p> <p>Make sure that the competency has been broken down into sufficient simple steps to facilitate modeling (These steps are sometimes called procedures, learning steps, enabling objectives, chunks, etc.)</p> <p>F. <u>Check for Understanding</u> – The teacher must be assured that the students can “do it right” before proceeding. The “checks” must be frequent and implemented with every student.</p> <p>If questioning is utilized, it should go beyond mere recall (knowledge) to probe higher levels of learning such as comprehension, explanation, analysis, synthesis and evaluation.</p> <p>G. <u>Guided Practice</u> – This “We Do” component is an opportunity for each student to demonstrate their grasp of the new learning by working through it under supervision and corrective direction of the teacher.</p> <p>The Instructor moves throughout the classroom / shop / laboratory to determine the level of mastery and to provide individual remediation as needed.</p> <p>H. <u>Closure</u> – The component that helps students bring things together in their own minds, to make sense out of what has just been taught. Closure is the act of reviewing</p>	
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	<p>and clarifying the key points of the lesson, tying them together.</p> <p>I. <u>Independent Practice</u> – The “You Do” component that is the reinforcement piece that guarantees that the learning will not be forgotten. It may be work in the shop, homework, group work or utilized as an element in a subsequent project. It should be implemented in different contexts as that the skill may be applied to any relevant situation – not only the context in which it was originally learned.</p>	
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Engagement – Intensive Instruction or Active Engagement

<p>Look For(s):</p> <p>Administrative observations of teacher lessons indicates that all students are engaged in the lesson or engagement strategies are being utilized.</p>	<p>Research has proven significant increases in student learning if <u>all</u> students are actively engaged, involved in the learning.</p> <p>Students are responsible for listening, responding, helping each other, being an active participant in the lesson.</p> <p>The following are a few engagement strategies:</p> <p>A. <u>Choral Responding</u> – <u>All</u> students respond to a question, statement, teacher cue, etc.</p> <p>B. <u>Response Cards</u> – Students use a card, small blackboard/whiteboard to respond to the teacher.</p> <p>C. <u>Partnering</u> – Students work with a partner to answer a question or problem and arrive at a conclusion to report to the entire class.</p>	<p>Resource:</p> <p><i>Teaching Matters</i> DVD</p> <p>PDE</p>
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Teacher Modeling		
<p>Look For(s):</p> <p>Administrative observations of teacher lessons indicates that the instructor:</p> <ul style="list-style-type: none"> • Models often • Ensures the demonstration/model has been broken down into easy to follow steps • Models in different ways, if possible • Models so that each student can see the demonstration • Makes frequent checks for comprehension • Ensures that all students are engaged 	<p>Teacher modeling provides students with clear expectations for the learning; when teachers provide the example of the learning.</p> <p>Show the student what the competency looks like – lead by example. Show the students your example first.</p> <p>If possible, model the learning in different ways to show the student that there can be different ways to do the same problem and arrive at the same answer.</p> <p>Modeling in CTE most often takes the form of an instructor demonstration of competency performance. Be particularly cautious that the demonstration has been broken down into easy to follow steps. Make sure that every student can clearly see the demonstration and check often to make sure that every student is engaged and understands what has been modeled.</p>	<p>Resource:</p> <p><i>Teaching Matters DVD</i></p> <p>PDE</p>
Scaffolding		
<p>Look for(s):</p> <p>Administrative Observations of teacher lessons indicate that the instructor:</p> <ul style="list-style-type: none"> • Utilizes guided notes • Instructor use of oral prompts or questions 	<p>Scaffolding is the temporary assistance provided to support learning of a new skill or a concept. It is intentional assistance to accommodate individual student needs.</p> <p>The goal of scaffolding is for the student to eventually perform the skill or understand the concept without the assistance (scaffold); therefore, the planned removal of the scaffold is</p>	<p>Resource:</p> <p><i>Teaching Matters DVD</i></p> <p>PDE</p>

<ul style="list-style-type: none"> • Breaks learning into small pieces (chunking) • Models • Uses the team environment so students can get help from their peers <p>Clear step-by-step procedures and learning materials have been prepared.</p>	<p>given.</p> <p>Scaffolding supports independent learning and builds confidence, because it provides just enough help to make the transition to mastery.</p>	
<h2>Metacognition</h2>		
<p>Look for(s):</p> <p>Administrative observations of instructor classroom performance indicates that:</p> <ul style="list-style-type: none"> • Students are coached and prompted to <u>think aloud</u> – explain steps to a problem in their own words • Instructor explains steps to solutions of problems • Extensive teacher/student verbalization and examples <p>Why/how questions</p>	<p>Teaching students <u>how to think</u> provides them with the skills to control their own learning. It also provides the skills that are transferable to new learning situations; therefore, the skills necessary to function in the new workplace.</p> <p>Metacognition is the process of showing students how to think through a problem. The instructor models how to break a problem down into smaller steps that can be solved more easily.</p> <p>The instructor coaches and prompts the student to explain, in their own words, every step of the problem. The instructor and students utilize extensive verbalizations and examples to organize the problem, break it down into manageable steps, and provide solutions to each step.</p>	<p>Resource:</p> <p><i>Teaching Matters DVD</i></p> <p>PDE</p>

Technology Centers That Work – Key Practices For Improving Student Achievement

<p>Resulting Product(s):</p> <ul style="list-style-type: none"> • CTC / High School programs organized and implemented in compliance with the SREB / TCTW model 	<p>The SREB Technology Centers That Work (TCTW) initiative has identified a set of Key Practices that impact student achievement:</p> <ol style="list-style-type: none"> A. <u>High Expectations</u> – Motivate students to achieve higher expectations by integrating high expectations into classroom practices and giving students frequent feedback. B. <u>Program of Study</u> – Require each student to complete a program that includes a minimum number of technical courses and an upgraded academic core. C. <u>Technical Studies</u> – Provide CTC courses in high-demand fields that emphasize higher-level mathematics, science, literacy and problem solving skills needed in the workplace and in further education. D. <u>Work Based Learning</u> – Integrate the CTC / high school learning with work-based learning that has been planned by both employers and educators. E. <u>Team of Teachers</u> – Provide teams of teachers from several disciplines the time and support to work together. Integrate reading, writing and speaking strategies into both academic and technical components of the program and integrate mathematics and science into the technical component. 	<p>Resource:</p> <p><i>Site Action Planning Workbook for Technology Centers That Work (TCTW), SREB</i></p>
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	<p>F. <u>Active Engagement</u> – Engage students in both the technical and academic courses in rigorous and challenging assignments using research-based instructional strategies.</p> <p>G. <u>Guidance</u> – Provide each student with the same counselor / mentor throughout high school to assist with setting goals, selecting the appropriate courses, reviewing student progress and implementing appropriate interventions.</p> <p>H. <u>Extra Help</u> – Provide a structured system of extra help to assist students in completing accelerated programs with high-level academic and technical content.</p> <p>I. <u>Continuous Improvement</u> – Use student assessment, program evaluation data, performance reports, enrollment/retention / placement reports, college remediation reports, student follow-up and advisory committee input to continuously improve school culture, organization, management, curriculum and instruction to advance student learning.</p>	
<p>The following Curriculum Development Steps are dependent on the intended Instructional Delivery Strategies; therefore, the school’s strategy preference or reform model must be determined and communicated to instructional staff.</p>		
<p>Resulting Product(s):</p> <ul style="list-style-type: none"> The school’s curriculum model will specify which research-based Instructional Delivery Strategies will be followed. 		

<p>8. Analyze each competency including its performance standards to determine the technical theory and academic content necessary to perform the competency.</p> <p>Resulting Products:</p> <ul style="list-style-type: none"> • Technical theory topics and academic content aligned with the PA Academic Standards are identified in the Lesson Plan or Competency Guide. 	<p>Select only critical technical theory topics that establish a knowledge base for the learner that is essential for competency performance.</p> <p>Organize the technical theory topics into a logical sequence. Small steps are necessary to cover difficult or complex technology.</p> <p>Technical theory topics can be listed and developed in the lesson plan/competency guide or, if preferred, listed as a separate competency with their own corresponding lesson plan.</p> <p>The technical theory topics discussed above must be reviewed to identify the corresponding PDE Grade 11, Math and Reading “Assessment Anchors” and Eligible Content.*</p> <p>Most technical theory topics required to develop the knowledge base essential to task performance will also match a “Reading or Math Assessment Anchors.”</p>	<p>Example: Competency</p> <ul style="list-style-type: none"> • Operate a fire extinguisher <p>Performance Standards</p> <ul style="list-style-type: none"> • Select the correct extinguisher. • Extinguisher is carried properly. • User is within stream reach of fire. • P-A-S-S sequence is followed. • Fire was extinguished <p>Technical Theory Topics:</p> <ul style="list-style-type: none"> • Identify and distinguish between the major types of fires. • Types of fire extinguishers. • Specific uses of each extinguisher. • Unique operating characteristics of each extinguisher. <p>Example: R11.A.2 Understand nonfiction appropriate to grade level.</p> <p>Eligible Content: R11.A.2.1.2 Identify and/or apply meaning of content-specific words used in text.</p> <p>In the example above “stream reach” are content specific words that serve as an opportunity to effectively teach the Academic Anchor within the context of a CTC Safety Lesson.</p>
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	<p>Break the learning down into simple steps (chunking). Many students can't find meaning in large topics.</p> <p>If text or reference material is too complex – summarize the material in an outline, power point, or an information sheet to help students focus on the critical. The hard copy of the power point is an information sheet.</p> <p>Introduce the lesson by explaining the critical importance of the topic (anticipatory set). “Why it is important for the learner to know!”</p> <p>Assign reading from a text, workbook, reference, handout, internet, etc and use guided notes to help the student to focus on the critical.</p> <p>Use a teacher led lecture / discussion to further clarify and cover what was read or assign students to small groups and utilize a group strategy like “Think-Pair-Share”.</p> <p>Incorporate as many visuals (pictures, diagrams, charts, models, video, simulation, etc.) as possible.</p> <p>Consistently direct students to explain the learning in their own words.</p> <p>Teacher should demonstrate the learning – model the learning.</p>	<p>Examples:</p> <ul style="list-style-type: none"> ● Read and study pages 5-7 in text. ● Read and study information Sheet #5. <p>● Use whiteboard, Microsoft PowerPoint, etc.</p> <p>Example: Explain in your own words the difference between fires A and B.</p> <ul style="list-style-type: none"> ● Solve a similar problem or calculation. ● Show a sample letter/memo. ● Describe a similar concept. <ul style="list-style-type: none"> ● Help each student solve the problem or complete the calculation. ● Help each student write the paragraph. ● Provide students with suggestions, constructive criticism, etc. <ul style="list-style-type: none"> ● Assign additional problems. ● Assign homework. ● Group students into teams to practice the learning.
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	<p>Teacher should provide “guided practice” – help each student through the learning.</p> <p>Teacher should assign “independent practice” to improve retention.</p> <p>Teacher must check for comprehension by questioning throughout the lecture / discussion and by utilizing quizzes and tests.</p> <p>Copies of each student’s quizzes and tests must be placed in the students file and subsequently utilized to determine grades.</p> <p>NOTE: If checks for comprehension (questioning, quizzes, tests, projects) indicate that leaning has not been achieved, the teacher must implement strategies for re-teaching.</p>	
<p>10. Identify learning steps to teach the technical theory and academic content aligned with anchors.</p> <p>Resulting Product(s):</p> <ul style="list-style-type: none"> • Technical Theory and Academic Content Learning Steps identified on the Lesson Plan or in the Competency Guide. 	<p>The instructional decisions concerning the methods to teach the technical theory and academic content specified on the lesson plan or in the competency guide.</p>	<p>Examples: Theory Learning Steps</p> <ul style="list-style-type: none"> • Read and study pages 5-7 in the text. • Ready and study Information Sheet #5. • Teacher lecture / discussion. • Complete quiz #5.

<p>11. Analyze each competency including the performance standards to determine the actual skill that would be performed on the job.</p> <p>Resulting Product(s):</p> <ul style="list-style-type: none"> Competency Procedures identified on the Lesson Plan or in the Competency Guide. 	<p>If the competency is complex or difficult, break it down into smaller steps called “procedures”. The sequence would be identical to the sequence followed on the job.</p> <p>The “procedures” are listed on the lesson plan. If they are lengthy or if there is a preference for a separate form, it can be attached to the lesson plan. (Procedure Sheet, Project Sheet)</p>	<p>Examples: Procedures for operating a fire extinguisher.</p> <ol style="list-style-type: none"> Pick up the fire extinguisher by its handle. Read the fire extinguisher label to determine fire classification uses and stream reach. Walk – DO NOT RUN – to within stream reach of the fire. PULL the pin at the top of the extinguisher (with a twisting motion) that keeps the handle from being pressed (this will break the plastic seal that holds the pin in place). AIM the nozzle (after releasing it from its clip if applicable) toward the fire. SQUEEZE the discharge handle (above the carrying handle) to release the agent. SWEEP the nozzle back and forth at the base of the flames. Make sure the fire is out by extinguishing any “hot spots”. <p>Exhibit: Sample Procedure Sheet</p>
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<p>12. Decide how you will teach the skill part of the competency.</p>	<p>Some Options and Guidelines:</p> <p>Introduce the lesson by showing how the competency or its individual procedures relate to something they already know. (Anticipatory Set)</p> <p>Introduce the lesson by explaining the critical importance of the competency or its individual procedures. (Anticipatory Set)</p> <p>The teacher must “<i>demonstrate/model</i>” the competency or its individual procedures.</p> <p>The teacher must provide “<i>guided practice</i>” – help each student perform the competency or its individual procedures.</p> <p>The teacher will assign “<i>independent practice</i>” to improve retention.</p>	<p>Examples:</p> <ul style="list-style-type: none"> • The use of a fire extinguisher is similar to using a sprayer or an aerosol can – just larger. • It is important to know how to use a fire extinguisher, because a fire can start at home or on the job – immediate response can save lives and property. • The teacher would slowly and repeatedly demonstrate the eight procedures in using a fire extinguisher. • The teacher would help each student perform each of the eight procedures in using a fire extinguisher. • Each student should operate the fire extinguisher several times.

<p>13. Decide how you will assess competency performance.</p>	<p>Written / Performance Standards* are always utilized to evaluate the student. A written record of the students' performance against the standards* must be placed in the students file and subsequently utilized to determine grades.</p> <p>To simplify record keeping, related competencies can be evaluated through a project or performance test. The evaluation sheet would include performance standards from each competency.</p>	<p>Teacher would observe each student operating the fire extinguisher.</p> <p>Teacher would evaluate their performance against the Performance Standards:</p> <ul style="list-style-type: none"> • Select the correct extinguisher. • Extinguisher is carried properly. • Student was within stream reach of fire. • P-A-S-S sequence was followed. (Pull, aim, squeeze, and sweep) • Fire was extinguished.
<p>14. Identify learning steps to teach and assess the skill part of the competency.</p> <p>Resulting Product(s):</p> <ul style="list-style-type: none"> • Learning Steps for the skill part of the competency. 	<p>The instructional decisions concerning the methods to teach and assess competency skill performance are added to the lesson plan.</p>	<p>Examples: Performance Learning Steps</p> <ul style="list-style-type: none"> • Teacher demonstration -operating a fire extinguisher. • Students practice operating the fire extinguisher under the guidance of the teacher. • Independent practice by the students. • Performance Test - each student will select the appropriate fire extinguisher and extinguish a fire following the performance standards.

<p>15. Complete the lesson plan or competency guide and assemble the attachments.</p>	<p>The lesson plan is similar to a competency guide cover sheet. It includes specific teaching and learning information, including:</p> <ul style="list-style-type: none"> • Major Topic • Competency • Performance Standards • Performance Objective • Procedures • Learning Steps • Theory Content • Assessment <p>The “Attachments” include, additional instructional materials:</p> <ul style="list-style-type: none"> • Information Sheet • Guided Notes • Assignment Sheet • Quiz/Test • Procedure Sheet • Project Sheet • Performance Test 	<p>Exhibit: Lesson Plans</p>
<p>16. Analyze the curriculum to identify common content for postsecondary dual or concurrent enrollment, articulation credit or other credentials.</p> <p>Resulting Product</p> <ul style="list-style-type: none"> • Articulation* records including records of students entering and completing the postsecondary program or obtaining credentials. 	<p>When possible, each curriculum must be aligned with postsecondary programs or Industry certification/credentials to provide students the opportunity to earn credits toward degrees or value added credentials.</p>	<p>Example:</p> <ul style="list-style-type: none"> • H.A.C.C. Dual Enrollment Program

<p>17. Analyze the curriculum to identify common content for NOCTI assessment and implement instructional strategies to improve performance.</p>	<p>Review each competency and lesson plan to identify NOCTI content.</p> <p>Provide student incentives, emphasize and reinforce content, and practice for improved performance.</p> <p>Utilize NOCTI pretests and study guide materials.</p> <p>Monitor NOCTI results and adjust instruction to improve performance.</p>	
<p>18. Monitor 11th grade PSSA results to identify instructional improvement targets.</p>	<p>Review individual student PSSA scores, PSSA performance predictor assessments or similar data to measure the effectiveness of the academic integration efforts and make adjustments to improve performance.</p>	

*** Connected to Chapter 339, Vocational Standard Requirements**

Appendix C
SREB Detailed Technical Assistance
Technology Centers That Work – 2009-2010

ACTIVITY TITLE: Technical Assistance Visit

TARGET AUDIENCE: One of the *TCTW* Sites, chosen by the Pennsylvania Department of Education. Participants to include members of the Career and Technical Distinguished School Leaders group.

DATES: Fall, 2009

LOCATION: To be determined

REQUIRED FOR: Selected members of the Career and Technical Distinguished School Leaders group

DESCRIPTION: The SREB *TCTW* Director will lead this visit with team members to consist of at least six to ten members selected from the Pennsylvania Distinguished Leaders group. These individuals will assume roles based on their professional backgrounds such as administrator, counselor, academic or career and technical teacher. This three day visit will be coordinated by the *TCTW* Director and will be extended an additional day to provide training to the team members to enable them to lead subsequent Technical Assistance Visits to other Pennsylvania career-technical centers in both Cohorts I and II. One or more individuals from the state agency should plan to join in this training.

Technology Centers That Work – 2009-2010

ACTIVITY TITLE:	Follow-up to Literacy Training
TARGET AUDIENCE:	Teams of faculty members from PA career and technical centers representing the area of literacy. These teams should consist of individuals who will assume the responsibility for presenting this training to other faculty members in their centers.
DATES:	One webinar in the Fall, 2009 and one in the Spring, 2010 (to be presented in two regions of PA for a total of four webinars)
LOCATION:	Two regions of PA, selected by the PA Department of Education
REQUIRED FOR:	Teams of CT teachers from PA career and technical centers
DESCRIPTION:	It is imperative that faculty members see the literacy training/implementation as being an ongoing process. The focus of these follow-up sessions will be continuing to embed reading, writing, speaking and other literacy skills and strategies into career and technical courses from the first years of training for all Cohort I <i>TCTW</i> schools.

Technology Centers That Work – 2009-2010

- ACTIVITY TITLE:** Developing Classroom Instruction to Enhance Mathematics Competencies in Career and Technical Education
- TARGET AUDIENCE:** CTE master teachers, accompanied by a mathematics teacher from the sending high school(s), should attend. It is recommended that for every two to three CTE teachers there be at least one mathematics teacher. An administrator should accompany this team.
- DATES:**
- | | |
|-----------------|----------------------------------------------|
| First workshop: | October 26-27 (West)
October 28-29 (East) |
| Second workshop | January 19-20 (West)
January 21-22 (East) |
| Third workshop | Summer 2010 |
- LOCATION:** Sessions will be presented in each of two regions at sites identified by the Pennsylvania Department of Education.
- REQUIRED FOR:** Participants will be teams representing the centers in Cohort I who are willing to assume the responsibility for presenting this information to faculty members of their centers.
- DESCRIPTION:** To support instruction related to mathematics and to continue the emphasis on skills learned last year, teams from the centers will conduct activities that assist them in mapping their curriculum to identify the activities, problems, projects and assessment items that relate to embedded mathematics in their instructional areas. It is recommended that the participants be selected from CT areas that represent the lowest scores on mathematics achievement as identified by the Pennsylvania Department of Education. Specifically, the teams will identify mathematics knowledge and skills for each nine week period develop lesson plans for integration of mathematics into their CT curriculum, develop practice problems to assist students in mastering mathematics' competencies and develop pre-test and end-of-nine weeks' tests that include the students demonstrating their mastery of mathematics concepts. This activity will assist teachers in aligning their curriculum to include state mathematics standards and help them to identify the embedded mathematics in their curriculum.

Technology Centers That Work – 2009-2010

ACTIVITY TITLE:	Career and Technical Center Guidance and Advisement
TARGET AUDIENCE:	Teams of administrators and guidance personnel from the career and technical centers to include one or more guidance counselors from the sending high schools.
DATES:	December 7-8 (West) December 9-10 (East)
LOCATION:	One workshop in each region as determined by PDE
REQUIRED FOR:	Teams from Cohort I career and technical centers
DESCRIPTION:	<p>In response to a need identified in many of the Technical Assistance Visit reports as well as input from career and technical professionals, two days will be used in each region working with teams of administrators and guidance personnel from the career and technical centers in helping them to develop an effective and comprehensive guidance and advisement system. Teams from the tech centers will work with guidance counselors from the sending high schools to develop plans to provide services to those students attending the tech centers for a portion of their school day.</p> <p>Specific topics to be covered include: recruitment, development of programs of study, working with the sending school personnel to encourage enrollment in academic courses that support the student's career interest and aptitudes, developing advisor-advisee programs that involves career and technical teachers working with students to take the right academic courses and who will serve as adult mentors for students with a particular focus on exposing students to the full range of career opportunities available to them, the career field of study and the education required to achieve each. This work will be conducted in coordination with Ed Trust so as not to duplicate their work with the <i>TCTW</i> sites.</p>

Technology Centers That Work – 2009-2010

ACTIVITY TITLE:	Site Development Workshops
TARGET AUDIENCE:	Site leadership teams who will assume responsibility for facilitating the implementation of the <i>TCTW</i> model in their center.
DATES:	September 21-22 (West) September 23-24 (East)
LOCATION:	One, two-day workshop in each region to be determined by PDE
REQUIRED FOR:	Teams from new <i>TCTW</i> sites as identified as Cohort II
DESCRIPTION:	<p>To assist new sites in the <i>Technology Centers That Work</i> initiative, training will be provided to teams representing the centers in understanding the Key Practices, Key Conditions and those strategies expected of them to implement the concepts of <i>TCTW</i>.</p> <p>Specifically, teams will develop awareness and understanding of goals and key practices that have been customized for shared-time technology centers; determine the status of their school and classroom practices as they relate to each <i>TCTW</i> Key Practice; examine strategies for aligning their curriculum to 21st-century skills and to college- and career-readiness standards; determine whether their courses have authentic real-world projects, problems and activities for teaching technical knowledge and skills and the embedded essential academic knowledge and skills; review how to create a program of study pathway that connects the shared-time technology center and high school academic and CT studies and high school and postsecondary studies and the workplace and leave with a three to five year site plan for implementing the goals and key practices of <i>Technology Centers That Work</i> at their center. Focus teams will be identified in each center with strategies for how these teams will lead the remainder of the school faculty members in implementing the <i>TCTW</i> model.</p>

Technology Centers That Work – 2009-2010

ACTIVITY TITLE:	Changing the Culture of Teaching, Learning and Expectations of Technology Centers: Using Data for Continuous Improvement in CT Centers
TARGET AUDIENCE:	Team consists of an administrator and faculty leaders who possess the attributes necessary to lead change within their center.
DATES:	October 9-10 (West) October 11-12 (East) Two, two-hour follow-up webinars in each region in the Spring, 2010 (Dates to be determined)
LOCATION:	To be determined by the Pennsylvania Department of Education
REQUIRED FOR:	Leadership teams from the centers in Cohort II
DESCRIPTION:	<p>The workshop will focus on using data to lead change creating high expectations, teaching and learning cultures. These workshops will lead participants to examine data about the need for change and to examine the current culture of expectations for teaching and student learning.</p> <p>CT center teams will participate in a two-day workshop in each region to rethink what the employee of the 21st century must know and be able to do. The teams will examine how they need to change their school practices, instructional methods and curricula. A major focus of this workshop will be looking at the intellectual demand teachers require of students. At the conclusion of the two-day training events, teams will identify a problem they discovered in their school data, identify additional research needed for overcoming the problem, create a solution to the culture problem and implement the steps necessary to correct the problem.</p> <p>The objectives of the two-day workshop will be:</p> <ul style="list-style-type: none">• Assist the team to analyze the culture of expectations for teaching and learning at a CT center when the mission is to prepare graduates for further studies and training leading to a certification, an associate degree and/or a bachelor's degree.• Assist the team to identify possible gaps in their school culture of expectations, root causes of those gaps and what they can do to change the culture of expectations for teaching and student learning.

- Assist the team in developing a set of proven interventions for closing the gap between current school culture and the culture they desire in the future.

Approximately eight weeks after the two-day workshop, the trainer will meet with the teams by hosting a two-hour webinar in each region. The facilitator will expect to hear reports of activities that have been successful since the initial workshop. It will also provide the trainer an opportunity to see how well things are going in the school and to offer advice and ideas for moving to the next step including at least one new strategy for team members to try before the next follow-up webinar.

Approximately eight weeks after the first webinar, the trainer will reconvene the teams for a second two-hour webinar. Each team will share the lessons they have learned with each other, to focus on additional strategies to improve school culture and to create action plans to build upon new learning.

Technology Centers That Work – 2009-2010

ACTIVITY TITLE:	Priority Literacy Training to School Teams
TARGET AUDIENCE:	Teams of five CT teachers with strong literacy skills accompanied by a CT center administrator who agree to assume the responsibility for sharing literacy skills with other faculty members of the center
DATES:	November 9-10 (West) November 11-12 (East) Followed by a two-hour webinar in each region approximately eight weeks later, followed by a second two-hour webinar approximately eight to 12 weeks later, followed by an additional two-day workshop in each region late in the Spring, 2010 semester.
LOCATION:	To be determined by the Pennsylvania Department of Education; webinars to be received at each center
REQUIRED FOR:	Teams from Cohort II CT centers
DESCRIPTION:	<p>These workshops will assist each of the <i>TCTW</i> centers to integrate reading and writing for learning into their curriculum and instructional processes. The intent is to get career/technical teachers to use reading and writing as a way to deepen and advance students' learning in their career/technical fields. One of the most fundamental career/technical skills for the 21st century is the ability to read, interpret and analyze the materials in the field one is pursuing and to be able to communicate ideas both orally and in writing.</p> <p>In day one the team will learn at least five literacy strategies that can be used to embed at least three reading standards into a CT teacher's curriculum and done in such a way that it will enhance students' learning in that CT area. The second day of the workshop will focus on two areas. The first goal is creating a literacy plan for the school to include the five goals of the literacy plan for a CT center; how to involve others in developing the plan and how to implement the plan and provide the support and materials that teachers will need.</p> <p>Each participant will be asked to go back and engage the students in reading one piece of technical literature a week, to analyze that material both orally and in writing. Teachers will also encourage students to do a short writing piece each week such as memos or bid proposals and summarize in writing what they have learned. The other goal of the second day will be to help the team plan how</p>

to incorporate the new literacy plan into instructional practices at their center.

Approximately eight weeks after the initial two-day workshop, the trainer will meet with the teams by hosting a two-hour webinar in each region. The facilitator will expect to hear reports of activities that have been successful since the initial workshop. In addition, content of the webinar will contain:

- A review of particular materials that are being used, materials being read, examples of weekly writings.
- Introduction to two more reading standards and three more reading strategies to link back to the main goals of the first two days.
- Discussion to determine progress on their literacy plans, progress of implementing the five literacy strategies they were given at the first workshop and how they embedded the reading and writing standards.

Approximately eight to 12 weeks later, the facilitator will again convene the teams by webinar to hear about practices that have worked and assist in responding to questions/problems that have been identified. In addition, the webinar will include:

- Introduction to two more standards and three more literacy strategies.
- Progress will also be checked on redelivering training to other staff members as well as how they are doing in using the reading standards and strategies they got the first two days plus the last webinar.
- Progress will also be checked on the development of their literacy plan and their strategies for implementing this plan.

Finally, teams will come back together for two days by regions to meet with the facilitator to allow each team to share the lessons they have learned with each other and to look at the process for planning a senior project for the following year. In addition, teams will focus on:

- Two additional standards and five strategies plus time for building their capacity to re-deliver training to the rest of the staff. This will include materials they will need, the kind of coaching they will provide and how they will implement the refined literacy plan.

Time will be provided to work with the challenges in their literacy plans. Strategies will be provided for coaching and creating classroom model behaviors to be used in faculty training.

Appendix D
Education Trust Detailed Technical Assistance

- ACTIVITY TITLE:** Transcript Analysis & Master Schedule Analysis Part I: Data Entry Training (Education Trust)
- TARGET AUDIENCE:** Cohort II CTCs and sending high schools will each send a team of two people to the training. Each team should consist of the School Counseling Director and IT specialist (staff member who understands and works with the school's student data management system and master scheduling software).
- DATES:** Choose **one** of the following days. Limit of eight CTCs (along with their sending high schools) per date
September 15, 2009
September 16, 2009
September 17, 2009
- LOCATION:** Local CTC and sending high school teams will meet at the CTC to participate in the live webinar training
- REQUIRED FOR:** Cohort II CTCs and their sending high schools
- DESCRIPTION:** The Transcript and Master Schedule Analysis consist of two parts. Part I is Data Entry Training and Part II is Data Analysis and Preliminary Goal Setting. This training will ultimately provide vivid pictures of the results of the implementation of school policies and practices and will show CTC and sending school teams where change needs to occur in order to ensure that every student graduates ready for success in both college and career.
- Part I will teach school counseling directors and district IT specialists how to enter data from student transcripts and master schedules into Excel workbook templates. These templates automatically create charts with the data. During Part II of the training, these graphs will provide critical information to focus leadership teams toward the systemic changes needed to better meet student learning needs and the analyses of these data and preliminary goal setting.
- While the training will be via webinar, the Education Trust will also provide a trainer who will be onsite at each CTC during both Part I and II of the training. This trainer will come to the local CTC for the webinar training to answer questions. The trainer will also be available to provide guidance and help after the training as teams are completing data input. It is anticipated that this same trainer will continue to work with the teams during Part II of the training.

CTC and sending high school teams will receive information in July concerning the student transcript and master schedule data needed for Part I of the training.

After learning how to input the transcript and master schedule data, teams will be shown how to complete a student support intervention grid. This grid will provide important information concerning the programs and activities the school provides to ensure that every student succeeds in a rigorous curriculum.

A timeline will be developed for completing the data entry before Part II of the training.

Education Trust Detailed Technical Assistance

- ACTIVITY TITLE:** Transcript and Master Schedule Analysis Part II: Data Analysis and Preliminary Goal Setting (Education Trust)
- TARGET AUDIENCE:** Leadership teams from CTCs and sending high schools. Each CTC team should include the CTC director or principal, CTC school counselor(s) and math or math-related technical instructor. Each sending high school team should include the building principal, school counseling department chair and at least one additional school counselor and a math teacher.
- DATES:** Choose **one** of the following days. Limit of 8 CTCs (along with their sending high schools) per date
November 17, 2009
November 18, 2009
November 19, 2009
- LOCATION:** Local CTC and sending high school teams will meet at the CTC to participate in the live webinar training
- REQUIRED FOR:** Cohort II CTCs and their sending high schools
- DESCRIPTION:** Teams will partially complete the following worksheets in the *Getting Results Continuous School Improvement Plan*
- Worksheet 5: Analyze Other Locally Relevant Data Sets
 - Worksheet 6: Compile and Prioritize Areas of Strength and Areas of Concern
 - Worksheet 7: Find Root Cause Using Foundational Guiding Questions
 - Worksheet 8: Set Student Achievement Goals
 - Worksheet 9: Set Other Locally Relevant Student Achievement Improvement Goals
 - Action Sequence – Monitoring Tool
- Teams will be led in a structured analysis of student transcript and master schedule data previously entered into Excel workbook templates. The resulting charts will show teams how students move through high school toward college and career readiness. These data will provide important information about policies and practices that encourage and support students to stay “on-track” to graduate ready for success in college and career as well as those policies and practices that discourage rigorous academic achievement for subgroups of students. After working with the data from the transcript and master schedule analyses, the teams will use their interpretations of the data to guide a review of their student support interventions.

This training will provide significant time for CTC and sending high school teams to talk about the issues facing CTC students. These issues will vary from site to site. A sampling of the issues brought up by Cohort I CTCs and their sending schools include the following:

- Scheduling
 - Can students attend the CTC and still take the coursework required for admittance to a university?
 - Can CTC students enroll in AP courses?
 - Is some type of career sequence available for non-CTC students?
- Consistency across the CTC region
 - Is there consistency in the math sequence across the sending high schools?
 - Is Algebra I in School A as rigorous as Algebra I in School B?
- Transportation Time
 - How much instructional time is lost in transporting from the high school to the CTC? How could this time be better used?

A plan will be developed of preliminary change goals and specific strategies for the CTC and high school teams to continue this work.

Transcript Analysis is a dynamic tool that provides a picture of the results of policies and practices in a school. Teams will review graphs and charts created from student transcript data as discussion starters for teams to thoughtfully examine how students move through high school.

This review of student transcripts helps school leaders delve into the following issues:

- Which students make it through the system and graduate ready for college and career and which students don't?
- Which students have access to and success in rigorous academic courses?
- Which students have access to support services? Which students need support and don't get it? Are these support services successful?
- Which students have sufficient academic experiences to prepare them for postsecondary and workplace success?
- Do students stay "on-track" to graduate ready to be successful in college and a career?
- Are there times when on-track students fall off track?
- What about the students who enter the school "behind?"
- Is the school able to support those students so they can move up to being "on-track?"
- What about students who enter school "ahead?" Do they stay ahead or is there a time when they tend to fall back?
- Where are student choke points - i.e., places where students start to get stuck academically?
- Where are the early warning systems that students need support or are falling behind? Are they catching students early enough?
- What school/district policies and practices inhibit rigorous student achievement in general and/or create opportunity gaps for groups of students?
- What issues do CTC and sending high schools need to work on together in order to meet student learning needs?

Master Schedule Analysis provides a clear picture of resource deployment in CTCs and their sending high schools. Each school will examine information about their faculty and their 2009-2010 master schedule. Charts and graphs will automatically be created by the workbook based upon the data input. These data will serve as discussion starters to help team members thoughtfully examine the following topics:

- How are resources allocated within the school?
- How are classes scheduled to coordinate smoothly with the CTC?
- Are classes scheduled so that CTC students are able to take rigorous college and career-ready courses?
- What percentage of classes has an academic focus and which students are enrolled in them?
- What percentage of classes does not have an academic focus and which students tend to be enrolled in these classes?
- Are teacher loads equitable?
- How are new teachers being supported?
- Are quality teachers being assigned to the students who need the best teachers?

Student Support Interventions Review allows teams to reflect upon the programs and activities schools are implementing to help all students be successful in a rigorous course of study. Teams will review a grid containing information about support interventions and their effectiveness.

Ideas gleaned from the analyses of the transcript and master schedule data will guide and focus this discussion.

Preliminary Goal Setting: Teams will develop preliminary goals to address the issues raised. Teams will learn about resistance to change and strategies to use to lower resistance. Finally, teams will develop an essential learnings grid that will be a core document used to develop preliminary goals and a plan to develop the *Getting Results* data-driven action planning document.

Appendix E
Pennsylvania Inspired Leadership Detailed Technical Assistance delivered by
Pennsylvania Association for Career and Technical Administrators

ACTIVITY TITLE:	PIL Program: Improving the Performance of Career and Technical Students on End of Program Occupational Competency (NOCTI) Assessments
TARGET AUDIENCE:	Career and Technical Supervisory and Administrative Personnel
DATES:	October 7, 2009 Additional date to be announced (Spring 2010).
LOCATION:	Nittany Lion Inn State College
REQUIRED FOR:	All Cohort II schools. PDE will pay the registration cost of up to three participants from Cohort II schools. This program is optional for Cohort I schools.
DESCRIPTION:	<p>This 30-hour program includes six hours of instructional time at the initial session, two hours of instructional time during the school year and a six-hour session after NOCTI assessment data has been received. Sixteen hours of embedded assignments that involve data analysis, planning and final reporting are also required.</p> <p>This PIL will include data analysis techniques, utilizing Excel spreadsheets, E-Metrics, benchmarking data and data from other schools to analyze present and historical student performance on NOCTI Assessments. NOCTI student performance by CTE program area will be used to portray which programs have demonstrated the most growth over the school year on the NOCTI assessment. Participants will learn how to analyze all student assessment data to make programmatic decisions targeted at increasing NOCTI achievement. The programmatic decisions may be based on curriculum and instructional changes that will better align the teaching process with the NOCTI assessment. These decisions will be assembled into a year-long Strategic Initiative that details the action plan to improve student achievement on the NOCTI assessment for each CTE program area. When the PIL program concludes at the end of the school year, participants will also create a Final Report which will detail the changes made and compare the NOCTI achievement data from each CTE program to the previous year's achievement data.</p> <p>Main core components of the NOCTI PIL program include the following points:</p>

- NOCTI achievement data analysis for current or base year by CTE program
- Root cause identification of curriculum strengths and deficiencies as revealed by student achievement levels
- Formulation and implementation of the Strategic Plan to improve areas in each CTE program revealed in root cause analysis
- Monitoring the implementation plan for each CTE program
- Data analysis of year one NOCTI scores
- Comparison of NOCTI base year scores to year one NOCTI scores
- Analysis of NOCTI achievement by CTE program area
- Assessment of the effectiveness of strategies implemented to improve student achievement on the NOCTI assessment in each CTE program area
- Creating a final report to document results of the plan
- Action planning for year two to increase student achievement on the NOCTI assessment in each CTE program area

**Pennsylvania Inspired Leadership Detailed Technical Assistance delivered by
Pennsylvania Association for Career and Technical Administrators**

- ACTIVITY TITLE:** PIL Program: Improving the Performance of Career and Technical Students on the 11th grade Math and Reading PSSA
- TARGET AUDIENCE:** Career and Technical Supervisory and Administrative Personnel
- DATES:** October 6, 2009
Additional date to be announced (Spring 2010).
- LOCATION:** Nittany Lion Inn
State College
- REQUIRED FOR:** Cohort II schools and Perkins schools are required to participate. PDE will pay the registration cost of up to three participants from Cohort II schools. The program is optional for Cohort I schools.
- DESCRIPTION:** This 30 hour program includes six hours of instructional time during the initial session, two hours of instructional time during the school year and a six hour session once assessment data has been received. Sixteen hours of embedded assignments that involve data analysis, planning and final reporting are also required.
- This PIL will include data analysis techniques, utilizing Excel spreadsheets, E-Metrics, benchmarking data and other schools to analyze 11th grade PSSA math and reading scores. PSSA student performance by CTE program area will be used to show which programs have demonstrated the most growth over the school year on the PSSA. Participants will learn how to analyze all student assessment data to make programmatic decisions targeted at increasing PSSA achievement. The programmatic decisions may be based on curriculum and instructional changes that will better align the teaching process with the PSSA. The decisions will be assembled into a year-long Strategic Initiative that details the action plans CTC directors will implement to improve student achievement. At the conclusion of the PIL program, participants will also create a Final Report which will detail the changes made and present the PSSA achievement data from each CTE program.
- Main core components of the PSSA PIL program include the following points:
- Achievement data analysis for current of base year by CTE program
 - Root cause identification of curriculum strengths and deficiencies
 - Root cause analysis of curriculum strengths and deficiencies on student achievement

- Formulation and implementation of the Strategic Initiative to address and improve areas revealed in root cause analysis
- Monitoring the implementation plan
- Data analysis of year one PSSA scores
- Comparison of base year data to year one data
- Analysis of PSSA achievement by CTE program area
- Creation of a final report to document results based on achievement data from each CTE program
- Action planning for year two

**Pennsylvania Inspired Leadership Detailed Technical Assistance delivered by
Pennsylvania Association for Career and Technical Administrators**

- ACTIVITY TITLE:** PIL Program: Improving the Achievement of Special Education Students in Reading, Math and Career and Technical Education
- TARGET AUDIENCE:** Career and Technical Supervisory and Administrative Personnel
- DATES:** Initial session offered twice, participants attend only one of the initial sessions. Additional date to be announced (Spring 2010).
- August 10-11, 2009
September 15-16, 2009
- LOCATION:** State College
- REQUIRED FOR:** Cohort I schools and Perkins schools are required to participate. PDE will pay the registration cost of up to three participants from Cohort I schools. This program is optional for Cohort II schools.
- DESCRIPTION:** The purpose of this PIL program is to provide CTC administrative staff with the special education knowledge and skills to work with instructors to improve the achievement of career and technical education (CTE) students with IEPs in math, reading and CTE. The 45-hour program will include 16 hours of instruction during the initial session, 25 hours of job-embedded assignments and a 4-hour culminating session. The program will incorporate online technical assistance to participants throughout the program. This PIL addresses Core Standard III (Ability to access and use appropriate data for informed decision-making) and Corollary Standard I (Creating a culture of teaching and learning with an emphasis on learning).
- Specifically, the PIL will provide instruction on creating data driven instructional decisions based on a legally and accurate IEP. The learning-focused PDE Standards Aligned Systems will be an integral component of this PIL program.
- Participants will learn how to utilize IEP-based knowledge to create a culture of teaching and learning among CTE instructors. Participants will be able to explain the legal requirements of an IEP and explain how to serve on an IEP team. The new Pennsylvania Department of Education IEP form will be a focal point of instruction. Specifically, CTE instructors will learn of their professional and ethical obligations to the student with an IEP by adhering to the requirements in the IEP. Participants will also understand specially designed instruction (SDI) and how to implement it based on the needs identified in the IEP. Progress monitoring will also accompany the SDI instruction so

participants will understand how to track student progress in meeting the learning requirements of the IEP.

At the conclusion of the program, participants should be able to:

- Use IEP procedures to determine student disability
- Identify targeted levels of student achievement
- Work with teachers to create specially designed instruction (SDI) for students based on needs identified in the IEP
- Implement Progress Monitoring
- Analyze data derived from Progress Monitoring to determine the effectiveness of the SDI
- Modify IEPs as necessary based on student achievement data

Appendix F
Career and Technical Distinguished School Leader Detailed Technical Assistance

ACTIVITY TITLE:	Career and Technical Distinguished School Leader (CTDSL)
TARGET AUDIENCE:	All schools involved in the TAP Initiative
DATES/SCHEDULE:	Cohort I Schools, Group A 15 Days Cohort I Schools, Group B 5 Days Cohort II Schools, Group A 35 Days Cohort II Schools, Group B 15 Days
LOCATION:	On-site at each CTC
REQUIRED FOR:	All Cohort I and II schools
DESCRIPTION:	<p>The CTDSL will work as part of your school team to assist you in identifying systemic or instructional barriers to improving achievement. The role of the CTDSL is flexible in its implementation according to the perceived needs of your school and work closely with the Director and team members. Ultimately, the goal is to identify and overcome barriers and gaps so that our students can experience more success with the PSSA math achievement and PSSA reading achievement and the NOCTI or end of program occupational assessments. All CTDSLs have had experience as a CTE administrator and have demonstrated results in student achievement from their own leadership experience.</p> <p>A key element to the work of the CTDSL is the connection between your school and the sending school districts. The CTDSL can help your team make the needed connections so that an approach to common problems can be developed and short term goals can be set. As the year progresses, the CTDSL can help the team take a look at the larger scope of technical and academic integration as we integrate 21st century learning into CTC programs.</p> <p>Many aspects are included in the support from the CTDSL. Their support includes, but is not limited to, expertise in data analysis, knowledge of current standards-based reform, knowledge of staff development for systemic change and utilization of current practices in integrating career and technical education into academic instruction resulting in improved student achievement. The CTDSL group possesses the emotional intelligence and capacity to establish short and long term relationships and facilitate change while being accepted in the CTC environment. They offer real help from real people.</p>

Appendix G
MAX Teaching Detailed Technical Assistance

ACTIVITY TITLE:	MAX Teaching
TARGET AUDIENCE:	All CTC administrators, instructors, sending district administrators (principals, program coordinators, etc.) and sending district instructors
DATES:	Dates determined by each CTC
LOCATION:	Generally the training is conducted at the CTC
REQUIRED FOR:	All Cohort I and II schools
DESCRIPTION:	This one day training session focused on introducing and illustrating teaching strategies related to literacy for implementation into all instructional environments and, in particular, the CTC classroom. The training is designed as a collaborative effort between the CTC and the sending districts in an effort to address literacy deficiencies they currently have within their student population. It is the hope that such a collaborative effort will enhance overall student achievement in academics as well as technical skill attainment. It is also the hope that such a collaborative effort will assist in bridging communication gaps between the CTC and sending districts.

Appendix H

Curriculum and Instructional Support Detailed Technical Assistance

ACTIVITY TITLE:	Curriculum and Instructional Support
TARGET AUDIENCE:	Career and Technical Administrative, Supervisory and Instructional Staff
DATES:	As scheduled
LOCATION:	On-site at each CTC
REQUIRED FOR:	Optional for all Cohort I and II schools
DESCRIPTION:	<p>CTC educators are held accountable for student performance through PSSA and NOCTI assessment requirements. Furthermore, the labor market requires transferable skills specific enough to facilitate employment, but not so narrow that dead-end jobs are the result. It should also be obvious that transferable skills are based on a strong academic foundation including reading, communicating, math and science. Curriculum and instructional delivery that can meet these demands requires a new focus on detailed planning, clear documentation of requirements/products/strategies, targeted staff development and consistent monitoring.</p> <p>This activity reviews a comprehensive model that includes numerous planning and decision making steps, curriculum products, instructional strategies and instructor observation forms and strategies. The model does not replace reform initiatives such as SREB or Learning Focused Schools, but clarifies how the reforms can fit into the school's overall plan for improvement. The review provides the school's administrative team with an opportunity to make comparisons and formulate appropriate decisions.</p> <p>This activity can also provide a model for instructor workshops on strategies to improve student performance. These strategies can include NOCTI/ PSSA /BCTE Program of Study crosswalks, task list preparation, analysis to identify the critical technical theory and performance standards, academic integration and research based instructional delivery methods including PDE Learning Matters focus on explicit instruction, active engagement, teacher modeling, scaffolding and metacognition.</p>

**Appendix I
2008 CAR Data**

2007 PSSA Results for 2008 CTE Concentrators	Reading			Math		
	Total Students	Number Proficient and Above	% Proficient and Above	Total Students	Number Proficient and Above	% Proficient and Above
All Students	16673	7276	43.6	16705	5279	31.6
Female	6876	3171	46.3	6889	1868	27.1
Male	9797	4105	41.9	9816	3411	34.8
American Indian	22	12	54.5	23	6	26
Asian	255	107	42	256	143	55.8
Black	2520	665	26.4	2533	436	17.2
Hispanic	1002	265	26.5	1004	195	19.4
Multi-Racial	32	15	46.9	32	14	43.7
White	12842	6212	48.4	12857	4485	34.9
Individuals With Disabilities	106	50	47.1	106	32	30.1
Disability Status (IEP)	4068	549	13.5	4079	379	9.3
Economically Disadvantaged	5637	1862	33	5658	1299	23
Single Parent	248	88	35.4	248	50	20.1
Displaced Homemaker	3	1	33.3	3	1	33.3
LEP	189	22	11.7	190	43	22.6
Migrant	11	0	0	11	2	18.2
Nontraditional	1885	924	49	1887	637	33.7
Gifted	168	132	78.6	168	126	75
Tech Prep	4267	2172	50.9	4272	1657	38.8

Appendix J
Letter Notifying Schools of School Improvement Plan



COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF EDUCATION

333 MARKET STREET
HARRISBURG, PA 17126-0333
www.pde.state.pa.us

March 30, 2009

Dear Perkins Administrator:

As a reminder, Perkins IV requires that schools evidence meeting levels of performance on each core accountability indicator. The regulation requires a school to submit an improvement plan if the school has failed to meet at least 90 percent of an agreed upon local adjusted level of performance for any of the core indicators of performance

All secondary Perkins recipients meet levels of performance on eight indicators. The eight indicators are listed.

- 1S1--Academic Attainment—Reading/PSSA
- 1S2--Academic Attainment—Math/PSSA
- 2S1--Technical Skill Attainment—NOCTI/NIMS
- 3S1--Secondary Student Achievement of High School Diploma
- 4S1--Student Graduation Rate—AYP/NCLB
- 5S1--Secondary Placement
- 6S1--Nontraditional Participation
- 6S2--Nontraditional Completion

Based on a review of Perkins data for your school, the school has not met 90 percent of an agreed upon local adjusted level of performance for one or more of the core indicators of performance. The Bureau of Career and Technical Education will notify any school entity not meeting the levels of performance. This letter serves as notification that as a school, the school has not met one or more of the required performance indicators. Specifically, your school has not met the following target(s).

Area School District	Reading 60.00		Math 40.00
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As noted in federal regulation, the school must submit an improvement plan. The improvement plan has been incorporated into the Perkins Local Plan and is to be submitted through the eGrant system.

As we move forward, we will provide to schools the opportunity to obtain training in the school improvement process that examines data, gap analysis, considers root causes and develops solutions to improve student achievement.

Thank you for your continued support of students enrolled in career and technical education. We look forward to working with you to address the academic needs of all students.

Sincerely,

Lee Burket, Ed.D.
Director
Bureau of Career and Technical Education

**Appendix K
Career and Technical Education
School Improvement Process**

Career and Technical Education

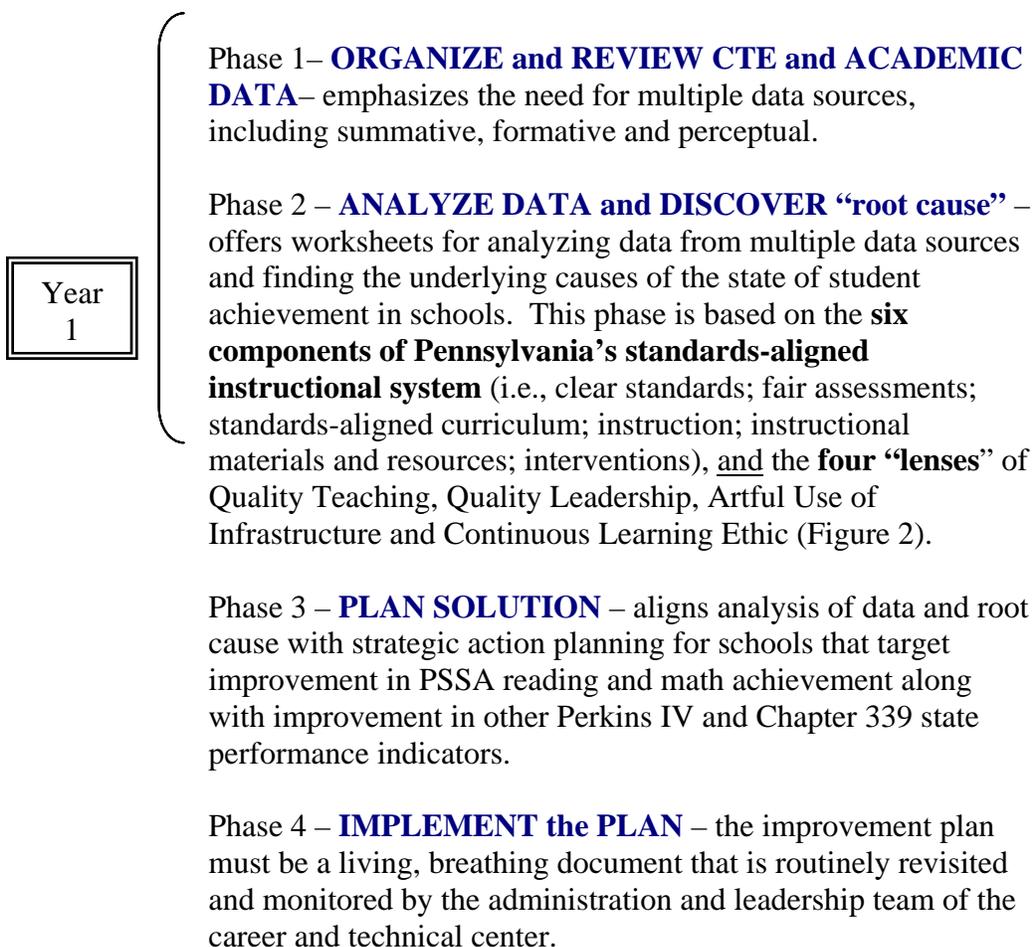
Perkins IV School Improvement Process

Introduction

There are two means for schools (Perkins recipients and non-recipients) to submit a local improvement plan. For any Perkins recipient not meeting at least 90% of an agreed upon local adjusted level of performance, the recipient will submit a local improvement plan as part of the Perkins Local Plan submission. The local plan submission provides opportunity for the recipient to (a) organize and review data, (b) analyze data and discover root cause, (c) plan solutions, (d) implement the plan over the fiscal year and (e) analyze the effectiveness of the plan implementation.

The other means of submitting a local improvement plan is to utilize the *Getting Results* document. The *Getting Results* document is the PDE developed tool for district and school improvement efforts defined by No Child Left Behind *Pennsylvania Accountability Workbook*. The *Getting Results* document is relevant to the academic indicators, 1S1 and 1S2. Any Perkins recipient involved in the Technical Assistance Program and any school that does not receive Perkins funding but is receiving state vocational education subsidy must use the *Getting Results* document to address the academic indicators.

The local improvement planning process includes a number of steps or phases.



Year
2

Phase 5 – **ANALYZE EVIDENCE of EFFECTIVENESS** – guides reflection of plan implementation. How was the plan implemented? How do you know if it was effective? What will you analyze in a career and technical center to determine the effectiveness of the plan?

Phase 6 – **REVISE the PLAN** – makes refinements and revisions after a student achievement focused status review of the two year plan.

Phase 7 – **IMPLEMENT the REVISION** – the revised improvement plan is an addendum to your two year plan that refines and further pinpoints career and technical center improvement efforts.

Figure 1: The Phases of Continuous Improvement Planning
For a Two Year Plan in Career and Technical Centers

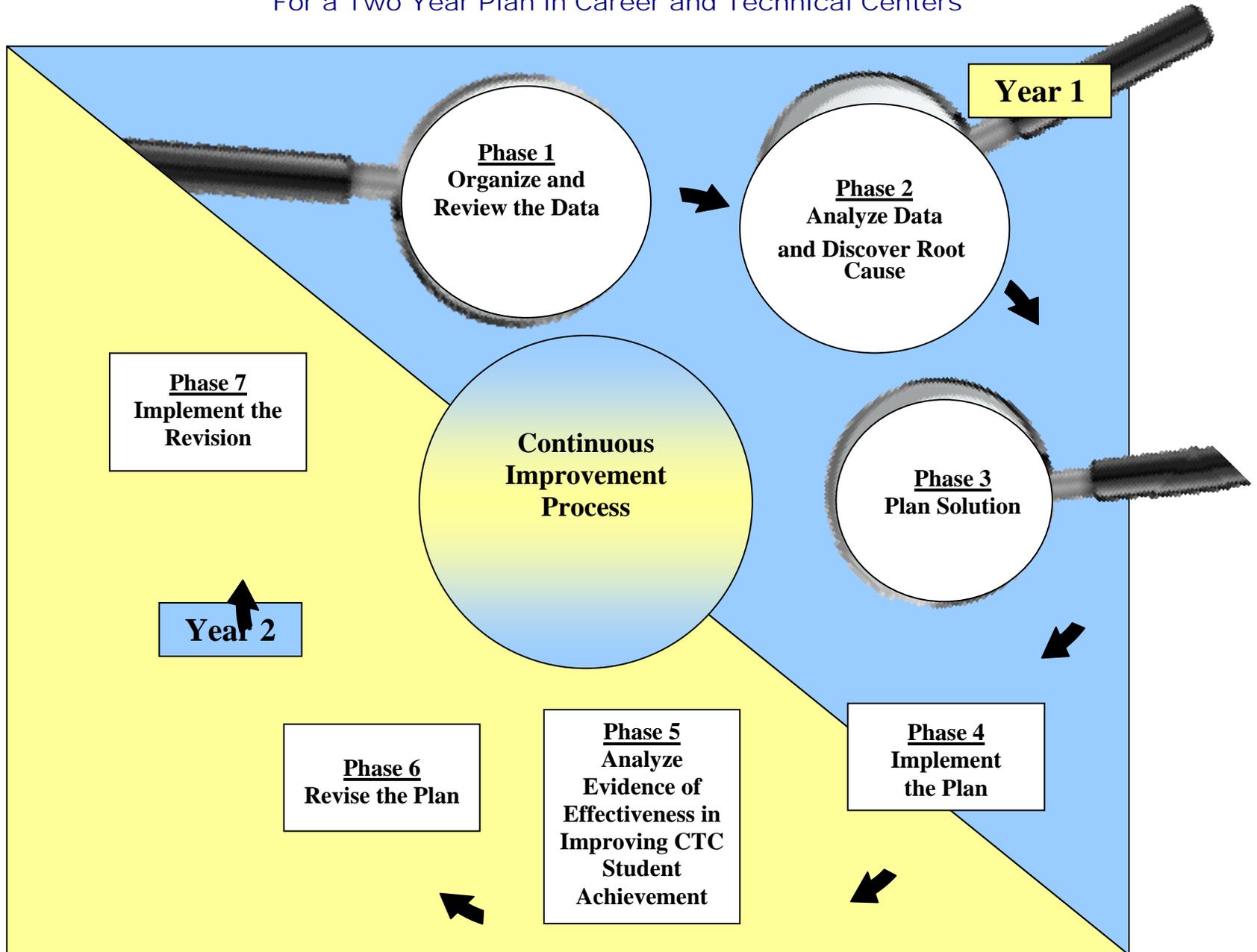
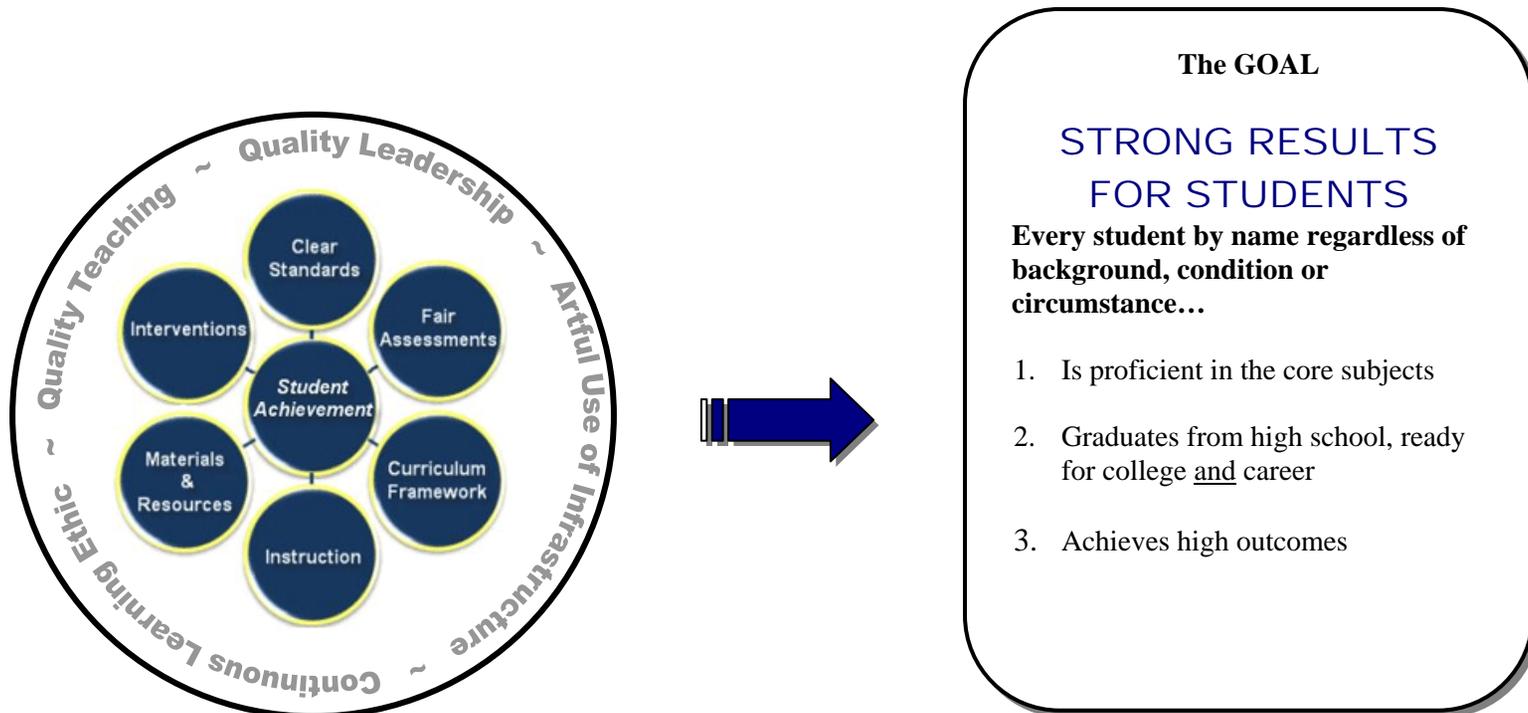


Figure 2: Pennsylvania's Design for Continuous School Improvement

Pennsylvania's design for continuous school improvement consists of two components. Together, the two components define the capabilities we need and must develop to ensure that every school meets the Commonwealth's Goal for all students.

The first component defines the **six components of Pennsylvania's standards-aligned instructional system**. The second component defines **four "lenses"** through which to view the standards-based system. Both components must be considered when developing a school improvement plan.



The design provides a common framework for work at all levels including the school, district, the Intermediate Unit and the state level. This common set of "organizers" ensures state-wide consistency and coherence in the design of programs, tools, technical assistance and targeted supports.

Additional Details to Local Improvement Planning Process

Phase 1:

Organize and Review Data

The goal of Phase 1 is to identify, organize and review the student data you will consider as you develop your continuous improvement plan.

Phase 2:

Analyze Data and Identify Root Causes

1. Root causes are those conditions or factors that directly cause or permit a performance gap to occur. Indirect causes are those that have an impact only through another related cause. For example, for academic achievement, effective instructional practices are a root (direct) cause within the control of schools. Teacher preparation programs are an indirect cause of academic attainment and are outside the control of the school.
2. There are *three phases* to identifying root causes: (a) identify potential causes, (b) analyze and evaluate potential causes (c) and select a critical few root causes.

Guiding Questions

1. Is there strong, observable evidence that standards-aligned curriculum and instructional practices are consistently implemented in each CTE program?
2. Is there strong, observable evidence that school staff regularly uses standards-aligned benchmark assessments to monitor and adjust instructional practices?
3. Is there strong, observable evidence that struggling students are identified early and are supported by an intervention infrastructure with a system for monitoring effectiveness?
4. Is there strong, observable evidence that all students have access to challenging, on-standard curriculum and rigorous assignments at the sending school?
5. Is there strong, observable evidence that professional development is linked directly to the school's instructional priorities; is standards-based and differentiated to meet the continuous learning needs of school staff?
6. Is there strong, observable evidence that school staff and administrators meet regularly to reflect on their professional practice and the progress of student learning, through an ongoing review and analysis of a variety of data and a sharing of best practices?
7. Is there strong, observable evidence that new and/or struggling teachers, staff and administrators receive timely, effective support and intervention?
8. Is there strong, observable evidence that a significant proportion of the school's resources (e.g., money, people, time) are directed toward strategies that enhance professional practice and the core instructional program?
9. Is there strong, observable evidence that the CTC administration is proactively involved to aligning the components of a standards-aligned system?

Phase 3:

Plan Solutions

Research improvement strategies and model practices. Identify the potential improvement strategies that can impact the root and indirect causes.

Phase 4:

Implement Improvement Strategies

Perkins Recipients Local Improvement Plan Completion of the Local Plan will evidence Implementation of the Phases of Continuous Improvement

Secondary and postsecondary Perkins recipients will utilize the Local Plan for the local school improvement process. The planning process presented earlier will be utilized in completing the Local Plan action plan.

Agency 1
Program Year is currently: [2009 - 2010]

Action-Activities/Uses of Funds
Objective: 1S1 Academic Attainment - Reading/Language Arts

Enter Action Plan
Add new data by entering the fields, then clicking the ADD button at the end of the row on the right.

Activity	Site	Funds Amount	Time Line	Root Cause	
		11			Add Clear
Total for		11			Edit Delete
Grand Total:		11			

Save Cancel

**Non Perkins Recipients
Career and Technical Education School Building Improvement Template
2009**

Department of Education regulations, Chapter 339 Vocational standards, requires a correction plan if schools do not meet performance levels associated with the accountability indicators. For those secondary schools not meeting levels of performance and that do not receive Perkins funds the following tables need to be completed.

There are a set of three tables for each indicator. The first table of each set asks the school to (a) organize and review data and (b) analyze data and discover root cause.

The second table of each set asks the school to plan solutions for each area of concern that was identified in the first table. Each solution is linked to a root cause that was identified in the first table.

The third table of each set asks the school to (a) implement the plan over the fiscal year and (b) analyze the effectiveness of the plan implementation.

**Improvement Strategies for Accountability Indicators:
Secondary Academic Attainment/Reading**

Table 1: Academic Attainment/Reading

Data Inquiry/Student Achievement Area of Concern	What Strengths or Concerns are Identified by the Data	Underlying Root Cause for Areas of Concern
<i>Analyze Reading Data</i>		

Table 2: Academic Attainment/Reading

Areas of Concern	Research Based Improvement Strategy	Root Causes Addressed
From Table 1		From Table 1

Table 3: Academic Attainment/Reading

What Needs to be Done Based on	By Whom	By When	What Resources	Monitoring Implementation: What Indicators Will be Monitored?
From Table 2				

Improvement Strategies for Accountability Indicators:
Secondary Academic Attainment/Math

Table 4: Academic Attainment/Math

Data Inquiry	What Strengths or Concerns are Identified by the Data	Root Cause for Areas of Concern
<i>Analyze Math Data</i>		

Table 5: Academic Attainment/Math

Areas of Concern	Improvement Strategy	Root Causes Addressed
From Table 4		From Table 4

Table 6: Academic Attainment/Math

What Needs to be Done Based on	By Whom	By When	What Resources	Monitoring Implementation: What Indicators Will be Monitored?
From Table 5				

Improvement Strategies for Accountability Indicators:
Secondary Technical Skill Attainment/NOCTI/NIMS

Table 7: Technical Skill Attainment

Data Inquiry	What Strengths or Concerns are Identified by the Data	Root Cause for Areas of Concern
<i>Analyze Technical Skill Attainment Data</i>		

Table 8: Technical Skill Attainment

Areas of Concern	Improvement Strategy	Root Causes Addressed
From Table 7		From Table 7

Table 9: Technical Skill Attainment

What Needs to be Done Based on	By Whom	By When	What Resources	Monitoring Implementation: What Indicators Will be Monitored?
From Table 8				

Improvement Strategies for Accountability Indicators:
Secondary Attainment (Diploma)

Table 10: Attainment (Diploma)

Data Inquiry	What Strengths or Concerns are Identified by the Data	Root Cause for Areas of Concern
<i>Analyze Secondary Attainment Data</i>		

Table 11: Attainment (Diploma)

Areas of Concern	Improvement Strategy	Root Causes Addressed
From Table 10		From Table 10

Table 12: Attainment (Diploma)

What Needs to be Done Based on	By Whom	By When	What Resources	Monitoring Implementation: What Indicators Will be Monitored?
From Table 11				

Improvement Strategies for Accountability Indicators:
Secondary Graduation Rate

Table 13: Graduation Rate

Data Inquiry	What Strengths or Concerns are Identified by the Data	Root Cause for Areas of Concern
<i>Analyze Graduation Rate Data</i>		

Table 14: Graduation Rate

Areas of Concern	Improvement Strategy	Root Causes Addressed
From Table 13		From Table 13

Table 15: Graduation Rate

What Needs to be Done Based on	By Whom	By When	What Resources	Monitoring Implementation: What Indicators Will be Monitored?
From Table 14				

Improvement Strategies for Accountability Indicators:
Secondary Placement/Postsecondary/Military/Job

Table 16: Placement

Data Inquiry	What Strengths or Concerns are Identified by the Data	Root Cause for Areas of Concern
<i>Analyze Secondary Placement Data</i>		

Table 17: Placement

Areas of Concern	Improvement Strategy	Root Causes Addressed
From Table 16		From Table 16

Table 18: Placement

What Needs to be Done Based on	By Whom	By When	What Resources	Monitoring Implementation: What Indicators Will be Monitored?
From Table 17				

Improvement Strategies for Accountability Indicators:
Secondary Nontraditional Participation/Male/Female Dominated Occupations

Table 19: Nontraditional Participation

Data Inquiry	What Strengths or Concerns are Identified by the Data	Root Cause for Areas of Concern
<i>Analyze Nontraditional Participation Data</i>		

Table 20: Nontraditional Participation

Areas of Concern	Improvement Strategy	Root Causes Addressed
From Table 19		From Table 19

Table 21: Nontraditional Participation

What Needs to be Done Based on	By Whom	By When	What Resources	Monitoring Implementation: What Indicators Will be Monitored?
From Table 20				

Improvement Strategies for Accountability Indicators

Secondary Nontraditional Completion/Male/Female Dominated Occupations

Table 22: Nontraditional Completion

Data Inquiry	What Strengths or Concerns are Identified by the Data	Root Cause for Areas of Concern
<i>Analyze Nontraditional Completion Data</i>		

Table 23: Nontraditional Completion

Areas of Concern	Improvement Strategy	Root Causes Addressed
From Table 22		From Table 22

Table 24: Nontraditional Completion

What Needs to be Done Based on	By Whom	By When	What Resources	Monitoring Implementation: What Indicators Will be Monitored?
From Table 23				

Possible Root Causes

Based on Research by the National Research Center for Career and Technical Education

Academic Indicators

Direct Root Causes

- Student Motivation and Engagement
- Time on Task
- Instructional Practices
- Curriculum Alignment
- Prior Learning
- Barriers to Learning

Causes Outside Control—Indirect Root Causes

- Family Demographic Characteristics
- School Expenditure Levels
- Career and Further Education Opportunities

Improvement Strategies

- Academic Integration
- Career Incentives and Articulation/Advanced Placement
- Career/Academic Guidance and Mentoring
- Participation in CTSOs
- Intensive and Early Academic Intervention
- External Academic Examinations, Industry or Professional Assessments and Certifications
- Focused Professional Development

Secondary Completion

Direct Root Causes

- Student Engagement
- High-Risk Behavior
- Academic Performance
- School Organization and Curriculum
- School Climate
- Grade Retention

Causes Outside Control—Indirect Root Causes

- Family Demographic Characteristics and Support Structure
- Student Transfer and Mobility
- Labor Force Participation

Improvement Strategies

- Drop-Out Prevention Programs
- School Structure and Climate Changes
- Curriculum and Classroom Level Changes
- Participate in CTSOs

Secondary Placement

Direct Root Cause

- Student Awareness of Opportunities and Consequence of Decisions
- Student Opportunity to Respond to Improved Awareness
- Employer Awareness of Student Availability and Qualifications
- Employer Opportunity to Take Advantage of Improved Awareness

Causes Outside Control—Indirect Root Causes

- Family and Peer Educational Attainment and Work Experience
- Availability of Employment Opportunities
- Employer Attitudes with Respect to Gender, Race/Ethnicity and Other Demographic Characteristics

Improvement Strategies

- Widen and Deepen Student Awareness of Opportunities and the Consequences of Decisions
- Expand Student Connections to Work and Careers
- Widen and Deepen Employer Awareness of Student Availability and Qualifications
- Participate in CTSOs

Participation in Nontraditional Programs

Direct Root Causes

- Career Guidance Materials and Practices
- Access to and Participation in Math, Science and Technology
- Instructional Strategies
- Nontraditional Role Models
- Early Exposure
- Curriculum Materials
- Occupational Choice
- Self-Efficacy
- School Climate
- Student Attitudes

Causes Outside Control—Indirect Root Causes

- Family Demographic Characteristics
- Peer Influence
- Media Representation
- Wage Potential
- Social Attitudes

Improvement Strategies

- Review Career Guidance Materials and Practices for Gender Bias and Nontraditional Exposure and Support
- Invite, Involve and Educate Parents
- Conduct Middle School Programs
- Provide Role Models and Mentors

- Conduct Targeted Recruitment Activities
- Conduct Pretechnical Training Program
- Collaborate with Community-Based Organizations
- Conduct Professional Development with Teachers at all Levels
- Implement and Model Gender-Fair Instructional Strategies
- Participate in CTSOs

Secondary Nontraditional Completion

Direct Root Causes

- Classroom Climate
- Support Services
- Student Isolation Based on Gender
- Role Models
- Instructional Strategies
- Self-Efficacy

Causes Outside Control—Indirect Root Causes

- Family Demographic Characteristics
- Peer Influence
- Media Representation
- Wage Potential
- Social Attitudes

Improvement Strategies

- Review Career Guidance Materials and Practices for Gender Bias and Nontraditional Exposure and Support
- Increase Teacher and Administrator Quality and Equity-Capacity Through Professional Development
- Increase Competence in Diversity and Sexual Harassment Prevention
- Conduct Nontraditional Student Support Groups and Peer Counseling
- Provide Nontraditional Role Models, Mentors and Job Shadowing
- Participate in CTSOs
- Invite, Involve and Educate Parents
- Provide a Continuum of Support Services
- Invite, Involve and Educate Business

National Research Center. (March 2003). *Improving Performance on Perkins III Core Indicators: Summary of Research on Causes and Improvement Strategies*. Columbus, Ohio: National Dissemination Center for Career and Technical Education.

Appendix L

Pennsylvania Department of Education School Improvement Activities

Standards Aligned Systems

Much research has been conducted as to what makes a great school. There are many intangible components. However, research supports the notion that great schools and school systems tend to have six common elements:

1. Clear Standards
2. Fair Assessments
3. Curriculum Framework
4. Instruction
5. Materials and Resources
6. Interventions

1. Clear Standards

Pennsylvania standards describe what students should know and be able to do and reflect the increasing complexity and sophistication that students are expected to achieve as they progress through school. The Assessment Anchors clarify the standards assessed on the PSSA and can be used by educators to help prepare their students for the PSSA. We use the metaphor of an “anchor” because we want to signal that the Assessment Anchors anchor both the state assessment system and the curriculum/instructional practices in schools.

2. Fair Assessments

Summative Assessment: seeks to make an overall judgment of progress made at the end of a defined period of instruction. They occur at the end of a school level, grade or course, or are administered at certain grades for purposes of state or local accountability. These are considered high-stakes assessments and the results are often used in conjunction with No Child Left Behind (NCLB) and Adequate Yearly Progress (AYP). They are designed to produce clear data on the student’s accomplishments at key points in his or her academic career.

Scores on these assessments usually become part of the student’s permanent record and are statements as to whether or not the student has fallen short of, met or exceeded the expected standards. Whereas the results of formative assessments are primarily of interest to students and the teachers, the results of summative assessments are also of great interest to parents, the faculty as a whole, the central administration, the press and the public at large. It is the data from summative assessments on which public accountability systems are based.

If the results of these assessments are reported with reference to standards and individual students, they can be used as diagnostic tools by teachers to plan instruction and guide the leadership team in developing strategies that help improve student achievement.

Examples of summative assessment are: PSSA and Terra Nova

Formative Assessment:

Formative Assessment: formative assessment is a process used by teachers and students during instruction that provides feedback to adjust ongoing teaching and learning to improve students’ achievement of intended instructional outcomes.

The primary purpose of the formative assessment process, as conceived in this definition, is to provide evidence that is used by teachers and students to inform instruction and learning during the teaching/learning process. Effective formative assessment involves collecting evidence about how student learning is progressing during the course of instruction so that necessary instructional adjustments can be made to close the gap between students' current understanding and the desired goals. Formative assessment is not an adjunct to teaching but, rather, integrated into instruction and learning with teachers and students receiving frequent feedback.

One key feature of this definition is its requirement that formative assessment be regarded as a process rather than a particular kind of assessment. In other words, there is no such thing as "a formative test." Instead, there are a number of formative assessment strategies that can be implemented during classroom instruction. These range from informal observations and conversations to purposefully planned instructionally embedded techniques designed to elicit evidence of student learning to inform and adjust instruction.

A second important part of the definition is its unequivocal requirement that the formative assessment process involve both teachers and students. The students must be actively involved in the systematic process intended to improve their learning. The process requires the teacher to share learning goals with students and provide opportunities for students to monitor their ongoing progress.

In Pennsylvania, we are defining formative assessment as classroom based assessment that allows teachers to monitor and adjust their instructional practice in order to meet the individual needs of their students. Formative assessment can consist of formal instruments or informal observations. The key is how the results are used. Results should be used to shape teaching and learning. Black and Wiliam (1998) define formative assessment broadly to include instructional formats that teachers utilize in order to get information that when used diagnostically alter instructional practices and have a direct impact student learning and achievement. Under this definition, formative assessment encompasses questioning strategies, active engagement check-ins (such as response cards, white boards, random selection, think-pair-share, popsicle sticks for open-ended questions and numbered heads) and analysis of student work based on set rubrics and standards including homework and tests. Assessments are formative when the information is used to adapt instructional practices to meet individual student needs as well as providing individual students corrective feedback that allows them to "reach" set goals and targets. Ongoing formative assessment is an integral part of effective instructional routines that provide teachers with the information they need to differentiate and make adjustments to instructional practice in order to meet the needs of individual students.

When teachers know how students are progressing and where they are having trouble, they can use this information to make necessary instructional adjustments, such as re-teaching, trying alternative instructional approaches or offering more opportunities for practice. The use of ongoing formative classroom assessment data is an imperative. Effective teachers seamlessly integrate formative assessment strategies into their daily instructional routines.

Diagnostic Assessments: the purpose of diagnostic assessment is to ascertain, prior to instruction, each student's strengths, weaknesses, knowledge and skills. Establishing these permits the instructor to remediate students and adjust the curriculum to meet each pupil's unique needs.

Examples of diagnostic assessments are: DRA's, Running Records, GRADE, GMADE

Benchmark Assessments: are designed to provide feedback to both the teacher and the student about how the student is progressing towards demonstrating proficiency on grade level standards. Well-designed benchmark assessments and standards-based assessments:

- measure the degree to which students have mastered a given concept
- measure concepts, skills and/or applications
- are reported by referencing the standards, not other students' performance
- serve as a test to which teachers want to teach
- measure performance regularly, not only at a single moment in time

3. Curriculum Framework

A curriculum framework specifies what topics are to be taught at which grade levels for each subject in the curriculum. At any given grade level, the topics that are taught are those-and only those-that are needed to provide the foundation for what comes next. In Pennsylvania, we are developing curricular frameworks that are built by identifying standards, anchors, big ideas, concepts, competencies, essential questions academic vocabulary and exemplars.

Curriculum Framework Defined:

Big Ideas: Declarative statements that describe concepts that transcend grade levels. Big Ideas are essential to provide focus on specific content for all students.

Concepts: Describe what students should know, key knowledge, as a result of this instruction, specific to grade level.

Competencies: Describe what students should be able to do, key skills, as a result of this instruction, specific to grade level.

Essential Questions: Questions connected to the SAS framework and are specifically linked to the big ideas. They should frame student inquiry and promote critical thinking. They should assist in learning transfer.

Vocabulary: Key terminology linked to the standards, big ideas, concepts and competencies in a specific content area and grade level.

Exemplars: Exemplars are performance tasks and can be used for assessment, instruction as well as professional development. Exemplars provide educators with a concrete example of assessing students' understanding of the big ideas, concepts and competencies.

4. Instruction

Aligned instruction comprises the following activities:

- Teaching topics that are aligned with the standards.
- Making sure that you get the right level of challenge. Instruction that is too challenging leads to frustration and discouragement on the part of students. Instruction that is not challenging enough results in little or no learning.
- Focusing teaching based on the learning needs of each student. These needs are those identified through evaluation of student achievement against the standards.

- Implementing instructional strategies that 'scaffold' by building on each other to help students achieve the standards.

The curriculum framework can be used as a guide for selecting only that material from textbooks, reading materials, software and any other instructional resources that are needed to fit the framework and match the standards. Any curriculum worth teaching should contain instructional materials that represent a balance between concepts and competencies, applications and problem-solving.

5. Materials and Resources

The Commonwealth of Pennsylvania has provided the following guidance to districts and schools when selecting research validated instructional materials:

- evaluated in comparison to a randomly assigned or matched control group;
- in studies of at least one semester, involving multiple schools;
- found to improve achievement significantly better than the control treatment and
- published in a peer-reviewed journal.

6. Interventions

The purpose of safety nets is to ensure students are provided with supports they need to meet and/or exceed grade level standards as quickly as possible. The foremost safety net is to ensure that students attend school and are ready to learn. Decisions regarding student entry to and exit from safety net programs should always be made on the basis of data. What we know from data indicates that early intervention is essential; safety nets are those built into the structure of regular classroom. A comprehensive system of safety nets involves a graduated set of interventions.

Funding to assist schools

Accountability Block Grant

The Accountability Block Grant (ABG) provides Pennsylvania school districts with financial assistance to implement effective educational practices and initiatives to improve student achievement. The Block Grant is an exceptional opportunity for districts in that it supports in-depth implementation of improvement strategies and allows districts to select from a breadth of programs to meet the specific learning needs of their students.

Education Mentoring

The Education Mentoring Initiative is administered through the Pennsylvania Department of Education and provides grants to community-based organizations with non-profit tax status to work in partnership with Pennsylvania public schools to develop mentoring programs. These mentoring programs link students with caring, responsible mentors to assist student in improving their academic performance and raising their school attendance, thereby reducing their risk of dropping out of school. These grants are awarded on a competitive basis.

Strategies

Distinguished Educators

Providing district supports and targeted intervention is a crucial component in the Pennsylvania Accountability System. The Distinguished Educator (DE) initiative is one strategy to provide direct assistance.

Distinguished Educators will work with struggling districts and schools as part of a team to build capacity and to provide assistance aimed at improving student achievement. DE's can be current or retired administrators, teachers, specialists and consultants with a wide range of experience and expertise, and are selected following a multiple-step application process.

Distinguished Educators serve as full-time members of a core team focused on instructional leadership and providing specific assistance based on targeted needs. The Distinguished Educator initiative requires a two-year commitment.

Essential Tools for School Improvement

The Pennsylvania Department of Education designed a series of improvement planning tools to support schools and districts as they strategically work to meet AYP. By using these tools, schools and districts can analyze their results from state and local assessments and use their data to improve instructional practices.

[Assessment Anchors](#): Designed to clarify and focus reading and math standards, assessment anchors are used to design the PSSA and link state assessments to curriculum and instruction in schools.

[Adopt-An-Anchor](#): This tool promotes collaboration between content areas. Teacher's "adopt" responsibility for ensuring assessment anchors are part of their content area curriculum and instruction.

[Context Counts](#): This tool is designed to determine staff availability in a secondary school and determine staff viability in an elementary school setting. It allows the school and district to assess its "artful use of infrastructure".

[Data Toolkit](#): The toolkit offers templates, graphs and charts, as well as guiding questions, to lead conversation about curriculum and instruction. The tools about "data" are part of the Data-Design-Delivery-Development and Documentation sequence found in *Getting Results!*, the school improvement planning framework, and *Leading for Learning!*, the district improvement planning framework.