

*Pennsylvania Association of Career and  
Technical Administrators (PACTA)*

*Position Paper*

*On*

*The New and Emerging Career and  
Technical Education System in  
Pennsylvania*

# ***Pennsylvania Association of Career and Technical Administrators (PACTA)***

## ***Position Paper***

The Pennsylvania Association of Career and Technical Administrators (PACTA) recognizes the critical role career and technical education (CTE) plays in Pennsylvania's workforce development and educational systems.

In addition, PACTA recognizes and embraces the reform initiatives included in Perkins IV and No Child Left Behind. In consideration of the significant changes being planned to establish a more responsive CTE system in Pennsylvania, PACTA members believe that ***fundamental CTE principles*** are compatible with, and must remain integral to, the new and emerging CTE system in Pennsylvania. This paper addresses those fundamental principles, including PACTA's position on each principle. In addition, this paper reviews the Career and Technical Education Program of Study Framework and offers recommendations for continued implementation.

## **Fundamental Principles of Career and Technical Education**

### ***Principle 1 - Program Planning***

- The development of new CTE programs must be based on documented labor market demand AND student needs and interests. A balance between these two key variables must be considered when planning a new program on the local level and approving a new CTE program at the state level.

**ISSUE:** Identified "high-priority occupations" must be a primary consideration in program development at the secondary and postsecondary level. The scope of a CTE program must be broad-based and include a range of related progressive occupational titles regardless of high-priority occupation status. The development of a job training program around one "high priority" SOC is more appropriate and often more effective when delivered through an adult training program rather than a secondary CTE program. Secondary CTE is not and should not become exclusively a job training program. It must continue to be an

integral component of the secondary education system preparing the “whole” student for transition to postsecondary education and work.

### ***Principle 2 - CTE Curriculum Development***

- The competency-based curriculum for CTE programs must be developed based on the knowledge required and skills performed in the workplace by incumbent workers. These competencies must be validated by a broad representation of incumbent workers and supervisors from that particular business or industry. A “competency profile” or listing from a nationally recognized organization (e.g. O\*Net) can provide a solid foundation for developing a relevant and valid industry-driven curriculum. State and national industry-validated certifications are also integral to the process of targeted competency-based curriculum development. Curriculum development must be continuous, with frequent revisions for remaining current with industry practices and standards.

**ISSUE:** The curriculum for each CTE program must be defined with sufficient detail to provide teachers with a clear understanding of required student knowledge and the skills necessary to apply that knowledge in a workplace environment. A clearly defined curriculum is also the basis for developing a valid end-of-program assessment, which requires precise and focused instruction by the teacher. The availability of sufficient time and expertise in developing the new programs of study are critical because they provide the foundation upon which instruction and assessment is built.

- Articulation agreements are the means by which students may transition from secondary to postsecondary education efficiently, with advanced credits and without duplication. These agreements with postsecondary institutions are critical for maintaining an effective CTE system.

**ISSUE:** As a high school educational reform initiative, Perkins IV requires a statewide articulation agreement between the CTE system and postsecondary institution. This federal legislation provides a tremendous opportunity to reform the secondary and postsecondary CTE system in Pennsylvania while greatly benefiting students and employers. However,

potential problems threaten to derail this opportunity. Without state legislative action and sufficient state board regulations to support this reform initiative, it is likely that “turf issues” among educational institutions will prevail, resulting in fractured, inaccurate, or incomplete articulation agreements. Legislation similar to Article XX-C, Transfers of Credits between Institutions of Higher Education, must be considered to make the Perkins IV requirements a reality for Pennsylvania CTE students.

### ***Principle 3 - Academic Programs of Study***

- Students in CTE must obtain the academic skills necessary to be successful in the high-skills workplace and in postsecondary education. The level of academic rigor required by the workplace in reading technical manuals, making algebraic calculations, and communicating with others through verbal or written methods is growing more and more complex. In fact, the level of reading required in many industries surpasses the level of reading skills required for college-level entry work.

**ISSUE:** Students entering the workplace after graduation need the same high level of academic preparation required to attend college. CTE students can no longer afford an academic education that tracks them away from college preparatory instruction. The level of academic preparation in math, English, science, social studies, and other areas must have the same high levels of rigor and relevance for students entering the workplace and for students matriculating directly into postsecondary education. The knowledge and skill set required for both are the same.

### ***Principle 4 - Professional Development***

- As with other professions, continuous and rigorous professional development must be available to CTE teachers. With the constant technological advances in the workplace, CTE teachers must have professional development opportunities to acquire new technology skills and to implement those skills into the CTE curriculum.

**ISSUE:** Opportunities for professional development that translate into new teacher skills reflecting industry changes and advancements must be present in the curriculum. Professional development provides the conduit

for these changes to occur. CTE teachers must have the capacity to impart new and emerging skills education to our students so they will be prepared for a high-skills workplace.

### ***Principle 5 - Use of Technology***

- The use and implantation of technology in career and technical education represents one of the best methods for providing workplace readiness skills. Technology continues to evolve exponentially and the high-skills workplace demands that students know, understand, and can use technology in completing their work responsibilities. Teachers must possess a thorough and contemporary knowledge of technology in their program area so they can demonstrate the technology and assure students can correctly apply it to given workplace situations.

**ISSUE:** With new and emerging technologies evolving in the workplace, CTE programs must be sufficiently equipped to provide students with these skills and experiences. CTE program equipment must be available through local or state resources to assure that the competency areas in the curriculum that require equipment mastery are available for instructional purposes and are in constant working order.

### ***Principle 6 - Assessment***

- Valid and reliable assessment methodology must be developed from a specifically defined curriculum. Before something can be measured it must first be defined. A clear and accurate description of anticipated outcomes (i.e., competency list) must precede and serve as the blueprint for the development of an end-of-program assessment instrument. The assessment methodology must be of sufficient design and scope to assess student progress through, and at the culmination of, the course.

**ISSUE:** Attempting to match an existing off-the-shelf occupational competency examination with an approved CTE program may have been acceptable prior to the accountability requirements in Perkins IV. This approach did not measure student achievement to the degree now required and is no longer acceptable to schools or to the teachers now being held accountable for student achievement. The instruments used to

measure achievement must be precisely developed from the established technical competencies required by the industry standards, which comprise each new program of study. New or revised occupational competency exams must be developed and customized to accurately measure the achievement of established industry standards for each program of study.

- Industry-based certification assessments and end-of-program tests are both important measures of student performance and must be an integral part of all approved CTE programs.

**ISSUE:** Generally, industry-based certification assessments and end of program tests serve different purposes. Industry certification tests, which may measure a narrow skill set more traditionally associated with job training, should not be used in lieu of an end-of-program exam unless the test is a broad and accurate measure of the overall technical competencies required by the curriculum.

### ***Principle 7 - Equal Opportunity***

- Career and Technical Education must continue to serve all students fairly and equitably.

**ISSUE:** Secondary CTE has a long and distinguished history of serving all students equitably and has been highly successful in educating large numbers of students with special needs. To continue serving all students equitably and successfully, a variety of career choices on a continuum from semi-skilled to highly skilled must be available in the scope of secondary CTE program offerings. These jobs are often more narrowly defined than the curriculum for a typical approved program/CIP Code required by the Pennsylvania Department of Education. Skill-appropriate job titles would be matched to the identified students' abilities and interests. Consequently, end-of-program assessment for these students must be customized to their career objective. In summary, program planning must remain a local decision based on input from each school's advisory and employer-stakeholder groups balancing the educational and workforce needs of the community.

### **Timeline for Implementation of Changes in Perkins IV**

Implementation of Perkins IV, particularly the development of new programs of study, assessment systems, and articulation agreements, will require a significant investment of time and money. A realistic implementation plan and timetable that spans several years, not months, is necessary to bring about the improvements described in Perkins IV. Establishing a seamless curriculum between secondary and postsecondary CTE programs will require fundamental changes to both of these delivery systems. For example, secondary CTE utilizes a competency-based model for curriculum development and an instructional system that is highly individualized. On the other hand, postsecondary CTE employs a course or textbook based curriculum and a group-paced instructional system. These fundamental differences cannot be changed quickly to achieve the reform initiatives contained in Perkins IV.

There is a recognition that the modern version of Career and Technical Education must prepare students for entry-skill employment and life-long learning including postsecondary opportunities. Upon graduation in approved CTE programs, students should have the skills, knowledge, and abilities to enter the workforce or proceed directly to postsecondary education. Although CTE is delivered through a competency-based model, benchmarking and assessment are necessary in order to provide for articulation of coursework and to prepare students for postsecondary opportunities.

## **Career and Technical Education Program of Study Framework Document**

The generally accepted framework used in operating career and technical education programs describes a school's programs and curriculum. We believe this framework should be used for framing the program of study concept envisioned in Perkins IV. While variability exists across schools, the following sections are typically in the framework document:

### **Section 1 CIP Code and Program Descriptions**

This section identifies the PDE CIP Code under which the program is approved, provides an overview of how a CTE program is described, and highlights the occupations related to the program. This section must be reviewed and periodically validated by an established occupational advisory committee (OAC). The program description should include the following:

- The names of the occupations included in the CTE program. This is referred to as the scope of the program and usually encompasses multiple occupations, which are identified by a recognized Department of Labor Code (SOC). The scope creates a parameter around the occupations for which training will be provided.
- A summary of the major competencies to be addressed within the program. For example, it should contain the skills, knowledge, attitudes, and related academics that will be taught (in general terms).
- Any licenses or certifications students may earn by completing the program.
- Common tools, equipment, technology, and software used in the program.
- This section can also discuss the students served in the program, the geographic location of employment sites, the approximate salary range of entry-level positions in careers related to the program, employment conditions and physical requirements for workers, anticipated changes in the occupations (labor market data), opportunities for advancement, and the types of businesses/industries that will employ graduates of the program.
- Postsecondary articulation opportunities including job titles that will require advanced skill training beyond high school should also be included.

## **Section 2     Program Philosophy**

This section provides the teacher's beliefs and philosophical perspective about the program. Beliefs can include, but are not limited to, the following:

- Treating students as individuals unique in their own right as opposed to simply being part of the class as a whole; serving students with “special needs” and “adults.”
- The relationship between career and technical education and academic education and cooperative efforts with other institutions (e.g., secondary/post-secondary articulation and vertical and horizontal articulation).
- Intended outcomes of the program including an understanding of ethics in the workplace.
- The role of business and industry and the community-at-large in operating the program.
- This section should include the contribution of career and technical education to workforce development and economic development in the local economy and information about the national and global economies. It should also note contributions to the local community, national society, and individuals. A description of how the program's philosophy is aligned with the school's philosophy is important as well.
- The value placed on internal and external evaluations of the program.

## **Section 3      Program Goals and Objectives**

This section describes the specific goals and objectives students are expected to achieve as they progress through and complete the program. These goals and objectives must be measurable and consistent with the goals and objectives as identified in the Strategic Plan.

Examples of goal statement and program objectives are included below:

### ***Goal - To increase student achievement***

***Objective 1: The percentage of students enrolled in a career and technical education program achieving proficiency on the 11<sup>th</sup> grade PSSA will meet the established State accountability standards.***

*Benchmark: The percentage of students achieving proficiency on the 11th grade PSSA in reading, writing, and math will increase a minimum of five percent annually toward achieving the State goal of 100 percent of students attaining proficiency by 2014.*

***Objective 2: The percentage of program completers achieving occupational competence as measured by an end-of-program assessment will meet the established State standards.***

*Benchmark: The percentage of students achieving at the competence level or above will increase annually by two percent.*

***Objective 3: All program completers will earn at least one industry recognized certification or license.***

*Benchmark: The percentage of students earning a Pennsylvania Skills Certificate (i.e., advanced level on a PDE-approved assessment) and/or a recognized industry credential will exceed the State standard along with an annual increase of five percent from the previous year.*

### **Methods to Reach the Objectives:**

1. Use quarterly assessment data to monitor student performance;
2. Use student and industry data to modify curriculum, instructional time, and instructional methodology to improve student achievement.
3. Use student support services staff to re-teach specific skills revealed by assessment data along with reinforcing underlying academic content.
4. Involve parents in helping students with specific lessons and homework assignments.

### **Section 4 Program Content**

This section is the actual program curriculum – specifically, what students must know and be able to do. It contains the following information:

1. A listing of each task in the program, headed by a major competency area; generally, CTE programs may include seven to 12 major competency areas and approximately five to 15 tasks within each duty area. Duty and task lists may be developed through a Developing a Curriculum or DACUM process, or by generating an occupational analysis from an existing and recognized data base (e.g., O\*NET, VTECS, etc.) If the listing is generated from an existing data base, the competency and task listing must be validated by an occupational advisory committee.
2. The academic content, aligned with Pennsylvania's academic standards underlying the technical curriculum must be identified and referenced for all tasks.
3. An occupational (curriculum) grid must be included indicating the tasks aligned with each job identified as part of the scope of the program.
4. A listing of the Terminal Performance Objectives shall be included.

## **Section 5 – Program Instructional Arrangement**

This section describes the instructional sequence for covering the complete curriculum.

For example, most Career and Technical Centers in Pennsylvania use a competency-based instructional arrangement system. Such a system can be characterized as individually paced, criterion-referenced, variable in a time/constant learning process, exit requirement emphasized, modularized, and providing frequent feedback, etc.

In addition, this section will include a description of the recommended academic course sequence students are expected to complete during high school. A cross-reference between these courses and articulation agreements will also be provided for appropriate career planning in accordance with a CTE student's career objectives. Finally, this section may also include a listing of any recommended or required prerequisites for entry into the CTE program.