

Career Clusters and Programs of Study: State of the States

April 2011

National Association of State Directors of Career Technical Education Consortium (NASDCTEc)

In 2007, the National Association of State Directors of Career Technical Education Consortium (NASDCTEc) first published *Career Clusters and Programs of Study: State of the States* to report on states' progress in implementing programs of study (POS) within the Career Clusters framework, a key part of the Carl D. Perkins Career and Technical Act of 2006 (Perkins IV). This brief uses 2010 survey data to give an update on states' progress in the intervening three years. Career Clusters and POS continue to help shape the structure, content, organization and quality of career technical education (CTE). Thirty-six states have completely adopted the Career Clusters framework, 11 states have modified the framework, and the remaining 6 states have developed individualized approaches.

The 2010 survey is based on responses from all 50 states, the District of Columbia, Puerto Rico and Guam. **The results reveal that most states continue to embrace Career Clusters and have dramatically expanded their implementation since 2007.**

Rapid Expansion of Career Clusters Implementation

“Whether due to student interest or labor market needs, many states have recognized the importance of increasing their available Career Clusters and have made progress in expanding POS over the past three years.”

The following Career Clusters have drastically increased in accessibility nationally, each being offered in at least 15 additional states since last reported in 2007:

- Transportation, Distribution and Logistics
- Science, Technology, Engineering and Math
- Marketing
- Manufacturing
- Information Technology
- Human Services
- Health
- Finance
- Education and Training
- Arts, A/V Technology and Communications
- Agriculture, Food and Natural Resources

The Government and Public Administration Career Cluster has historically been among the least-offered Career Clusters; however, between 2007 and 2010, the number of states offering the Career Cluster doubled.

Self-Reported State Level of POS Implementation

States' self-reporting also demonstrates significant progress in POS implementation. In 2007, one state indicated that it had not made any measurable progress in implementing POS and was at the “awareness” level. According to the 2010 survey, this is no longer the case. The survey results show that all states have surpassed the awareness level (see Figure 1). Ten states rate their progress at the “novice” level, indicating that POS implementation is still in the early stages in these states. The tremendous increase in the number of Career Clusters offered across the country may account for some of the lag; some states have been quick to offer as many Career Clusters as possible, adding to the stress of beginning a new

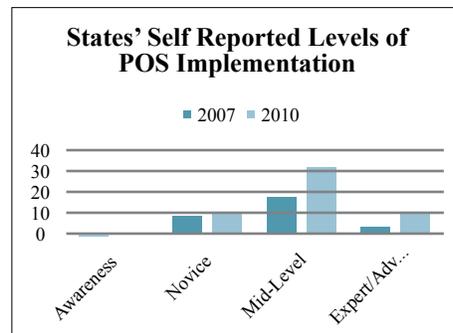


Figure 1

program. More than half of all states (32) self-reported a “mid-level” status, an increase of 14 states since 2007. Lastly, 11 states (7 more than 2007) report being at the “expert/advanced” level, showing high competency and possible mentorship capabilities.

Growing Connections between Learner Levels

One of the policy goals of Perkins IV is to more effectively connect states’ secondary and postsecondary education systems. As such, POS include both secondary and postsecondary components. Survey results show that from 2004 to 2007, secondary implementation of POS increased by 16 percent; between 2007 and 2010, however, secondary implementation climbed an additional 66 percent. Also since 2007, 2-year community and technical colleges increased their POS implementation by 57 percent. Lastly, 4-year universities increased POS implementation by 32 percent. Though POS continue to increase overall, many states are implementing only segments of POS - secondary or postsecondary – and not a POS that seamlessly links multiple learner levels. The Program 10 Component Framework circulated by the Office of Vocational and Adult Education (OVAE) states that POS include a “non-duplicative sequences of secondary and postsecondary courses within a POS ensure that students transition to postsecondary education without duplicating classes or requiring remedial coursework.” Based on survey results, many states will need to continue to build and implement POS that include both secondary and postsecondary components that meet this requirement.

POS in the following Career Clusters are highly implemented by states at both the secondary and postsecondary level, providing greater opportunity for effective secondary-postsecondary transition:

- Architecture and Construction (secondary: 49 states; postsecondary: 41 states)
- Health Science (secondary: 49 states; postsecondary: 45 states)
- Information Technology (secondary: 49 states; postsecondary: 43 states)
- Hospitality and Tourism (secondary: 48 states; postsecondary: 40 states)

Following closely behind are: Transportation, Distribution, and Logistics; Business Management and Administration; and Manufacturing.

State vs. Local Development of Programs of Study

Through Perkins IV, states continue to have wide discretion in implementing POS; this has resulted in varied approaches across the nation. As shown in Figure 2, about half (25) of the states favor a process of local POS development that require state oversight and approval. Almost one quarter of states (12) develop POS at the state level and allow for voluntary local use. Similarly, another quarter of states (13) develop POS at the state level, but mandate local use.

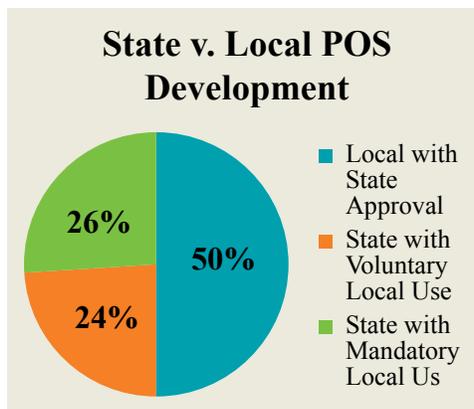


Figure 2

As in 2007, about one-third of states supplemented their survey responses with additional information, reflecting the complexity of CTE and the individual adjustments required for each state to meet the needs of stakeholders.

Some states mandate the basic Perkins IV requirements at the local level, but allow for local control after minimum POS requirements have been met. Other states develop templates, allowing locals to adopt and implement them as needed. One state develops secondary POS, but collaborates regionally to develop postsecondary POS.

State Policies in Support of Career Clusters and POS

States use a variety of policies and procedures to implement Career Clusters and POS. One major purpose of Perkins IV is to ease the secondary-postsecondary transition for CTE students. Over half of the states (31) support effective transitions by implementing state-wide articulation agreements. Many of the articulation agreements apply only to specific Career Clusters, and some apply only to specific schools in a state (i.e. students can transfer credits across community colleges only).

States also use industry-validated Knowledge and Skills Statements to provide a clear path from secondary to postsecondary education or the workforce. While only 9 states have officially adopted Knowledge and Skills Statements, over half of states (30) use a variation of the standards. Additionally, several states directly involve industry representatives in POS and curriculum development rather than adopting Knowledge and Skills Statements.

Perkins IV allows states to develop and administer technical skills assessments to measure student proficiency. Many states (20) rate their progress in developing and implementing the assessments at either the “awareness” or “novice” level. Over half of states (27) report their progress as “mid-level” and only 9 states are at the “expert/advanced” level. Supplementary comments on this topic revealed that many states use technical assessments available through a third party. Some states have developed assessments for either secondary or postsecondary, while others struggle to develop technical assessments due to cost or problems with data collection.

Pennsylvania State Snapshot

Contributed by: Lee Burket, Director
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Pennsylvania Department of Education

Students Occupationally and Academically Ready (SOAR) is the Pennsylvania Department of Education/Bureau of Career and Technical Education Program of Study Initiative. The initiative aligns with the POS requirements mandated in Perkins.

Each POS was developed following Pennsylvania’s template for [POSⁱⁱ](#) and engaged secondary, postsecondary and business/industry representatives on statewide committees. SOAR Programs lead students into a career pathway and aligns an educational plan which articulates the secondary CTE programs to postsecondary degree, diploma or certificate programs. Each POS is based on national industry standards where applicable and provides students the opportunity to earn industry-recognized [certificationsⁱⁱⁱ](#).

“The programs include coherent and rigorous content aligned with challenging academic standards and relevant career and technical content.”

Each POS includes a Pennsylvania statewide articulation [agreement^{iv}](#) between secondary schools and postsecondary institutions that are recipients of Perkins funds. Secondary students have the opportunity to earn a minimum of 9 college credits for their secondary coursework and to enroll in any of the postsecondary institutions regardless of geography.

The programs prepare today’s student in high priority [occupations^v](#) which include career categories that are in high demand by employers, have higher skill needs, and are most likely to provide family sustaining wages.

A [SOAR website^{vi}](#) was established in July 2009 to provide detailed information about Pennsylvania’s POS efforts. The website is divided into two sections: Frameworks and Articulations. The [Frameworks link^{vii}](#) provides many details concerning SOAR Program development, and details the 35 current SOAR Programs available to Pennsylvania students. The [Articulations link^{viii}](#) provides information concerning 130 postsecondary statewide articulation [agreements^{ix}](#) executed with our 34 Perkins post-secondary institution [partners^x](#) including the equivalency count for each course at each institution.

SOAR Programs have many benefits to today’s student including: saving money on college tuition, saving time by shortening college attendance, entering the right career pathway in secondary school, entering the job market with job-ready skills and attaining a consistent education.

Colorado State Snapshot

Contributed by: Scott Stump, Dean
Career and Technical Education
Colorado Community College System

When implementing Plans (Programs) of Study as a component of Perkins IV, Colorado recognized the potential of these tools to reposition Career and Technical Education as the central pillar of education reform. Our priorities were quick and wide adoption by our secondary and postsecondary institutions.

Based on those goals, we assumed a non-prescriptive, flexible approach. Examples for each Career Cluster and pathway were provided (based on the generous sharing of the Texas Education Agency). However, local institutions were permitted to develop their own Plan of Study within the parameters of Perkins. These locally-developed instruments were then reviewed and approved by state content specialists. This locally-driven approach resulted in wide awareness and initial use of the plans. Instructors recognized the significant potential of Plans of Study to both recruit and retain students. Plans of Study also drove a comprehensive career guidance movement in the state resulting in state legislation requiring Individual Career and Academic Plans for all students in grades 9 through 12 beginning in the fall of 2011.

“This ‘for all students’ mentality has required us to consider Plans of Study in nearly all of the pathways and to add Energy as a 17th cluster.”

We are currently working with secondary districts to create sample Plans of Study encompassing the cluster map in order to make them a district wide initiative and tool as opposed to a “CTE” tool.

In this implementation we also found that having one Plan of Study form for both secondary and postsecondary was inadequate due to our significant growth of adult learners returning to postsecondary education. We were concerned that adult learners reviewing the Plan of Study with secondary courses might deduce that they would not be able to succeed in the Pathway without having the high school coursework. To

remedy this potential barrier, we created a postsecondary Plan of Study template focusing specifically on the needs of adult learners: quick access to a ladder of certificates and degrees with time and money requirements indicated, and support structures and credit for prior learning resources. These tools have provided an excellent resource for and connection to our Department of Labor Workforce Centers and One Stop Shops. They are also the focus of two pilot projects and research projects we are working on with Colorado State University and through our Perkins Incentive Grant.

The most significant barrier we have faced is the lack of a common secondary curriculum due to a strong philosophy of local control. This will be our point of focus for the next few years as we evolve to more aligned Plans of Study leading to an end of program assessment.

The progress we have made is really the result of our partnerships with school counselors, postsecondary advisors and the Colorado Department of Higher Education which provides free access for all students to an online career planning system called [College in Colorado](#). The site also houses the Plans of Study for each secondary and postsecondary institution allowing students and potential students to easily find their best path to the career of their choice.

Obstacles to Transition

Varying amounts of non-Perkins funding are provided to CTE programs from state and local sources. In the 2010 survey, almost half of states reported a decreasing trend in state and local funding at the secondary and postsecondary levels. While decreased funding is an expected repercussion of the poor economy, it is only one of the many challenges faced by career technical education programs throughout the states.

States vary in how they leverage Perkins’ funding to implement Career Clusters and POS. Very few states require that locals distribute a large percentage of Perkins funding through POS. In fact, about 70 percent of states (36 for secondary and 38 for postsecondary) require from 0 to 25 percent of Perkins dollars to be spent through POS.

Perkins IV mandates that all locals implement at least one POS. Through the transition year, many states mandated only this minimum while locals learned to implement POS. As stated in the 2007 publication, there was an expectation that states would phase-in POS after the transition year. Despite the expectations, most states continue to mandate only one POS at both the secondary and postsecondary level. At the secondary level, 28 states still implement just one POS. Sixteen states mandate more than one POS, and 9 states mandate POS in all Career Clusters. At the postsecondary level, the majority of states (34) mandate only one program of study. Eleven states mandate more than the minimum, and 3 states mandate that all programs of study are implemented. However, despite the low number of programs of study mandated by the state, many locals have taken initiative and implemented additional programs of study on their own. **Ideally, POS should be implemented in a way that aligns secondary and postsecondary elements in order to show continuity between the learner levels.**

Conclusion

In accordance with our country's changing demands, the economy is projected to require a more highly-skilled workforce favoring students with a CTE background. Fortunately, CTE provides a plausible solution by requiring rigorous academic and technical courses to train students who are able to fill the jobs of the future. POS and Career Clusters provide the groundwork for this solution and enable the creation of a knowledgeable and highly-skilled workforce nationwide. In the coming years, we anticipate a continuing trend towards further and more effective implementation.

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