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BY JOHN C. FOSTER

In the summer of 2006, Congress approved the renewal of the Carl D. Perkins Career and Technical Education Act. Provisions within that act caused a refocusing within the career and technical education (CTE) community due to changes in articulation, testing, rigor, programs of study and general philosophy. More specifically, there was a renewed focus on assessment and the data that assessment results provide. The accountability section (113) emphasizes that assessments must be “valid and reliable and include, at a minimum, challenging academic standards and attainment of skill proficiencies, including achievement on technical assessments that are aligned with industry recognized standards.”

This language was supported and reinforced in subsequent meetings at which the Office of Vocational and Adult Education (OVAE) provided non-regulatory guidance. States were informed that they would

need to establish baselines of technical competence, determine how to identify completers, increase the number of completers reported annually, and establish a target for annually improving overall technical competence.

To understand why this change occurred, one simply has to look at current pressures on the educational system as a whole. The focus that No Child Left Behind (NCLB) standards placed on states to improve academic performance was exacerbated by the fact that during the last four years of Perkins III, the administration had zeroed out Perkins dollars completely. Although there were many reasons for taking such a position, one reason may be linked to the failure of the past legislation to score at a satisfactory level when viewed as an effective program by the Office of Management and Budget’s Program Assessment Rating Tool (PART). It was alleged that CTE had no data to substantiate its existence, even though those of us in

the community know and understand the significant contributions that CTE makes to the individual, the economy, the infrastructure, and our standard of living.

## NOCTI and CTE

The National Occupational Competency Testing Institute (NOCTI) has been serving the CTE community for almost 45 years. It is in the unique position to produce longitudinal data that indicates technical competence levels based on end-of-program testing across the country. NOCTI’s data confirms that CTE is indeed having an impact. With a variety of diagnostic tools and professional development-related services, NOCTI assessments meet all the requirements of the accountability section of Perkins, and NOCTI delivers certification services for a number of industries. Many states are already engaged in using industry-based assessment, and are using the resulting reports and data to recognize student

# Improving Technical Competence:

## How the CTE Community is Responding

achievement, improve instruction, and maintain the currency of a particular program offering.

Some of the entities using these tools have a history with data spanning the last 20 years. Educators understand that any assessment is a snapshot of a student's knowledge and skills at that time. Career and technical educators understand the value of formative assessment and of making an end-of-program assessment part of a system that produces improvement in programs and recognition for students. CTE teachers also recognize the value of assessing various domains to determine competence. Many NOCTI clients assess a student's cognitive skills as well as their psychomotor skills. Many of these clients also use workplace readiness skill assessments to help determine students' mastery of the "soft skills" (affective) that employers demand.

NOCTI has witnessed a growing sophistication on the part of schools and

states across the country—not only in their understanding of data, but also in the effective use of data for program improvement. As a simple example of the growing sophistication of the CTE community regarding testing, certification, reporting, standards and professional development, consider the type of questions that we receive on our customer service lines. Just a few short years ago we received questions primarily focused on procedures—things like: "What month does the pre-test testing period start?" or "When are my students' scores available?" Now the questions are a bit different: "The norm indicates my class is in the upper quartile nationally, but the comparison to the national criterion score doesn't show the same results, which is more accurate?" or "Is it true that as a population taking a test increases in size over a period of years, that the norm tends to decrease?" We have gotten the sense that not only are states, schools and

teachers becoming more sophisticated with the incorporation of data derived from reports and testing, but they have also begun to assemble a system that includes professional development, embracing a continuous improvement strategy.

Below is a review of how some states—New Jersey, Pennsylvania, Maine, Georgia, Virginia, Missouri, Connecticut—and High Desert Educational Service District in Oregon are changing their assessment strategies:



### New Jersey

The state has taken the initiative to adopt CTE standards that are aligned to the national clusters. It has assisted in the development of pathway level assessments, and is comparing data derived from that level of assessment to data derived from job specific assessment data. The change doesn't end there, however; this state

wants to assist local schools and regional centers in their planning and in setting strategic goals to continually improve the overall quality of their programs. In order to do that effectively, they need consistent data derived from end-of-program reports. New Jersey has designed a state report which will help it provide assistance to programs, while at the same time streamlining the data itself.



### Pennsylvania

This state is another long-time user of both written and

performance assessments. It's secondary delivery system is expansive, utilizing more than 80 regional centers and more than 200 high schools to deliver CTE programming. Recently Pennsylvania's legislature appropriated funds

for improvement of both academic and technical competencies. On the technical competence side, these funds were utilized over a three-year period to assist individual schools in raising their scores on end-of-program competency assessments. This program consists of the implementation of pre-tests at the start of the program, study guides with formative assessments throughout the duration of the program, and professional development delivered through a school mentor. The program establishes baselines and benchmarks for improvement and has shown remarkable increases in scores during its first year of implementation.



### Maine

Maine maintains 27 regional centers covering a very large geographical area and as a state is rela-

tively new to end-of-program assessment. Like many states, Maine is interested in offering industry certification exams resulting in a credential for students, but it also realizes that, from a program improvement standpoint, it is equally important to have consistent end-of-program data derived from competency testing.

A few Maine schools are using NOCTI assessments for all programs where available because the need for consistent data is helping to drive program improvement. Moving forward, Maine will need assessments for programs where national industry-recognized assessment and credentials do not currently exist. Like New Jersey, Maine has assisted in the development of pathway level assessments. It has also begun a process of establishing a baseline in a number of program areas, including construction, child care and health care.

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## Georgia

Consistency and a tightly woven relationship between standards, assessment and professional development was an important consideration for Georgia. In an effort to maintain the individuality of the state's CTE delivery system, Georgia deftly created a plan which brought together groups of secondary, postsecondary and business subject matter experts to develop performance standards for its curriculum, aligning it to the economic clusters within the state at the pathway level. Georgia is in its fourth year of delivering professional development workshops to instructors regarding the implementation of Georgia Performance Standards (GPS). Additionally, efforts are currently under way to

identify national existing assessments that align to the GPS. In some instances, state-level exams have been developed that will serve as end-of-pathway assessments. This project is in the early stages, but eventually, state-level administrators will use data derived from student testing in their professional development activities (sponsored for instructors and other local school personnel) to improve student achievement.



## Virginia

The Commonwealth of Virginia has taken an aggressive stance regarding assuring that its students and programs benefit from end-of-program assessment and certification. As of January 2008, Virginia assesses in 151 different areas using a

mixture of industry certifications and NOCTI assessments, and annually goes before the Virginia Board of Education to add/delete appropriate assessments and certifications. The state has set targets to assess 100 percent of CTE completers (students who have finished a CTE concentration and are scheduled to graduate) by 2010-2011.

Virginia has taken the time to develop an extensive online system of professional development presentations that explain programs and the intricacies of using each of the assessment types. This instruction includes everything from ordering to reporting the results. In the 2008-2009 school year, the state began utilizing a state-implemented system to capture these results and actively seek methods of using data for professional development. Like many other states, Virginia contracts with NOCTI for an end-of-year report

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that covers all of the assessment activities across the state.



### Missouri

Missouri was able to capitalize on grassroots interest from several area career centers,

becoming involved in technical skill assessment prior to the reauthorization of Perkins in 2006. The state is actively exploring the use of pathway-level assessments in some program areas such as family and consumer sciences, while using more technically focused assessments in the Skilled Technical Sciences areas to measure Perkins technical skill attainment.

In addition, performance assessments similar to those used as career development events at the state FFA convention will be used as a technical skill attainment measure for agriculture education concentrators. Missouri, as well as Pennsylvania and Virginia, has also been involved in a study from the National Research Center for Career and Technical Education (NRCCTE) on how teachers and administrators use end-of-program assessment data to help inform professional development. The results from this study will help inform state and local administrators about best practices and future professional development opportunities.



### Connecticut

Connecticut has two unique assessment programs. For the past eight years, the state's comprehensive high school system has administered to all concentrators assessments aligned to the state's Performance Standards and Competencies. The statewide assessments are focused on improving the quality of teaching and learning in Connecticut's CTE programs. In 2008, the state expanded its assessment approach by

integrating the Academic Foundation Competencies for reading and mathematics into its CTE assessment. End-of-year assessment data is used to meet the federal reporting requirements under sub-indicator (IS2) Technical Skill Attainment.

Since 2000, the Connecticut Vocational Technical School System has administered end-of-program assessments to students enrolled in any of the 22 CTE programs offered at 18 technical high schools across the state. Test results are used to identify and create an action plan to address areas for improvement. Data is evaluated at the school, program and individual student levels. The goal of this program is for the data analyses to drive changes in curriculum and instruction and that, over time, will result in an increase in student achievement.



### High Desert Educational Service District in Oregon

This past year, a case study sponsored by NRCCTE was completed in the High Desert Educational Service District (HDES) in Oregon. HDES was able to demonstrate its use of data; a few of the outcomes are provided below. HDES has utilized information gleaned from the NOCTI assessment data to make curricular changes regarding the teaching of basic measurement. More specifically, the end-of-year assessment data has exposed lower than the norm scores in blueprint reading and teachers have been tasked with developing instructional strategies to raise these scores.

In addition, instructors at the community colleges are involved with secondary teachers in designing instructional enhancements in this area. Thanks in part to this sort of collaboration, beginning in 2014, students will have the ability to obtain math and/or science credit for CTE courses at the secondary level. High Desert is also heavily involved in the

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NRCCTE's "Math-in-CTE" program and is certified to train others in the process. Also, as a result of an analysis of end-of-program technical assessment data, professional development funding has doubled in recent years. Although this site is relatively new to the utilization of assessment data as a path to improvement, staff and administration now speak a common language throughout the High Desert region. There is a solid understanding of the relationship between standards, assessment data, and program improvement.

### Moving Forward

These examples clearly show that the CTE community is responding positively to improve technical competence! This technical competence is determined not just by a single test at the conclusion of a static set of standards. It is determined by a series of longitudinal benchmarks and fostered by program improvements that show that the CTE community has embraced a system of continuous improvement in the teaching of not just three or four subject areas, but hundreds of dynamically changing technical programs. CTE is moving forward and has the data to prove it! The goal of technical competence improvement is being achieved and the focus remains squarely on our most important resource—our students! ■

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