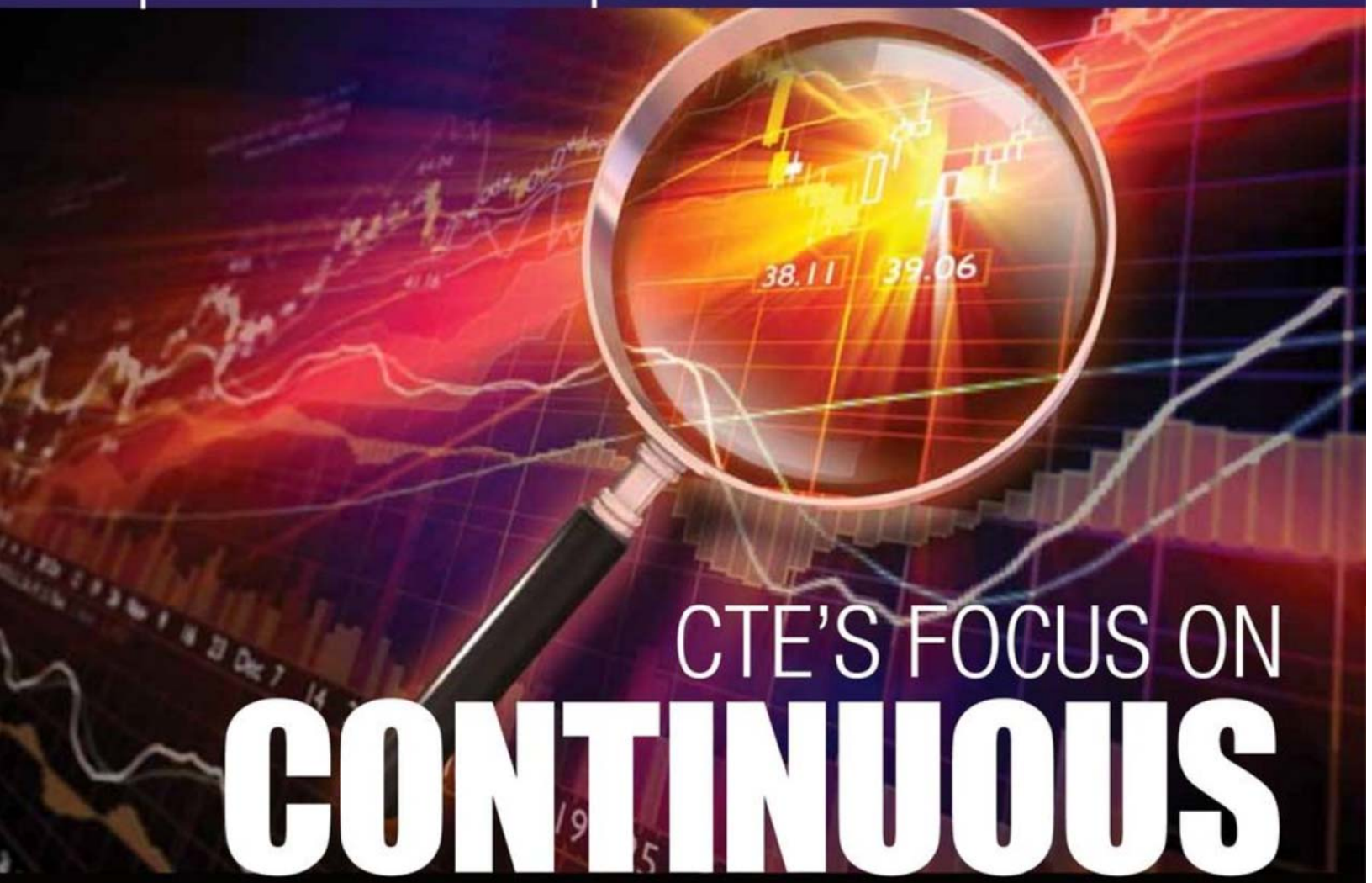

CTE'S FOCUS ON CONTINUOUS IMPROVEMENT

BY JOHN FOSTER, PATRICIA KELLEY, SANDY PRITZ AND CAROL HODES

Just one of the ways career and technical education (CTE) is revamping its image is through increased attention to data-driven instructional techniques as a means of improving and focusing instruction on what matters most. Accountability and data have increasingly become a core focus of research, news and commentary about education in recent years. Though some of the attention to accountability and data use may be tied to regulatory requirements, there is also recognition among educators that metrics matter.

Throughout its existence, CTE has focused on performance and on measuring that performance. For example, being able to write about how to fix an automobile's brakes is important, but actually fixing them is critical. NOCTI, a partner in the National Research Center for Career and Technical Education (NRCCTE), has shown throughout its 44-year history that technical data can be used to improve technical programs. Another NRCCTE partner, the Southern Regional Education Board (SREB), has been proving over its 23-year existence that integrating academic and technical content further improves students' competencies and skills. As part of their commitment to the NRCCTE, both NOCTI and SREB are currently conducting research projects on the applicability of professional development. NOCTI's focus, described in this article, has been to research, design, refine and launch a program to help CTE educators understand and use technical data to create real and sustainable program improvements.

Perkins IV and Industry Certifications

Perkins IV spotlighted such structures as programs of study (POS) and third-party industry-related assessments. Many CTE programs around the country interpreted Perkins IV's mandates to mean that all CTE graduates must have an industry certification. This universal acquisition, were it possible, would provide a means for students to certify their skills to employers. The teacher, in turn, could proudly boast, "60 percent of my students acquired the XYZ certificate!"

NOCTI is a strong advocate for industry certification, and delivers numerous certification tests itself, but NOCTI recognizes some flaws in the educational scenario described above. How would this teacher use assessment data to improve his or her students' programs? How would the teacher move students from 60 percent to 80 percent acquisition rates? And how could all teachers in a school—or a state—maintain this focus on improvement?

Data and Standards

Fortunately, data provides a way to make program improvements that help all students achieve and reach goals, such as certification, and provide educators with the ability to make informed decisions. The key is to link measurable results (in the form of data) to improved instruction. These measurable results must align with standards set for the types of skills students need for college and career readiness. It is widely agreed that students need a combination of technical, academic and employability skills, and standards related to each of these appear on almost all state Web sites. Such standards define goals for educational accountability and are meant to be instilled in students as they progress through various levels of education. National standards for technical skills exist in some industries, usually through industry associations, and are embedded in the assessments (and often certifications) that measure student achievement. Assessment organizations make these standards available on their Web sites so that students, parents and educators can easily reference them.

National standards for academic subjects exist as well, either within individual states or through associations within the various disciplines; these may be subsumed by the recently developed Common Core State Standards sponsored by the National Governors Association and the Council of Chief State School Officers.

NOCTI's NRCCTE Research

In 2008, the NRCCTE funded a survey, conducted by NOCTI, of CTE teachers and administrators in five states to determine the status of and need for CTE professional development. The survey's primary objective was to investigate how CTE educators used technical assessment data to inform instructional decisions and identify the source(s) of knowledge that enabled them to do so. A majority of respondents (68.8 percent of administrators; 69.2 percent of teachers) indicated that they used technical assessment data to make instructional decisions. Most of the others felt that they should be doing so but weren't. The typical changes teachers made, based at least partly on technical assessment data, included revising lesson plans, adding more projects and exercises in areas where scores were low, re-evaluating textbooks and other materials, and requesting additional supplies or equipment. Teachers also reported providing poorly performing students with additional assistance and using their strengths to motivate them.

When asked how they learned to use data to make instructional decisions, the administrators were more likely to have had formal training (31.3 percent), and less likely to be self-taught (18.8 percent). Teachers were most likely to be self-taught (30.8 percent), and less likely to have had formal training (17.9 percent) or professional development (15.4 percent).

A second objective of the NRCCTE survey was to examine the types of professional development CTE educators had received related to using data, and how those offerings were perceived. About one-third of educators had not received any such professional development. Of

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CTEDDI will provide educators from participating states with professional development intended to increase their knowledge and skills in the use and interpretation of assessment data for the purpose of making instructional improvements.

those who had, most felt that the training contained necessary information at an appropriate level. Sample professional development topics included interpretation and application of student test data, and information on types of tests, test items and test terminology.

A third objective was to understand educators' perceptions of the types of professional development and the most useful topics. Results indicated a preference for a mixture of formal training and practical follow-up. Respondents were also asked about desired topics for professional development. Teachers wanted to know what questions test data can and cannot answer, appropriate and inappropriate uses of test data, information on test development, attributes of a good test, the meaning of technical terms on tests, interpreting group-level test data, and how to select the most appropriate measures for the curriculum. Administrators wanted training that included interpreting student- and group-level test data; comparing classroom or individual data to school, district, state or national averages; measuring student and classroom improvement over time; and information on types of tests and test items available.

A New Tool for Program Improvement: CTEDDI

CTE educators have been focusing on benchmarks and continuous quality improvement for many years. Thanks to the work of the NRCCTE, new tools will enable them to focus on specific content with far greater precision than before. One of these tools is NRCCTE's CTEDDI (Career and Technical Educators using Data-Driven Improvement) model, developed through NOCTI's research. CTEDDI uses multiple research-developed processes to ensure that its methods "work" for CTE educators.

Any professional development system, once implemented, has to have staying power, so CTEDDI features an in-state facilitator who visits teachers and administrators on a scheduled basis. It also features an electronic professional networking site, where teachers using the process can share implementation strategies in their building, in their state or across state lines. The model involves a five-step cycle that takes advantage of collecting and corroborating real data from the educators' own programs, analyzes the data using a team approach in an initial work session, and guides educators to create and implement an action plan with the support of long-term mentoring throughout the school year.

CTEDDI is the outcome of several years of research within the CTE community. NOCTI's survey of teachers and administrators identified a need for instruction on using data from end-of-program assessments and indicated the desired characteristics of such professional development. Research literature and other NRCCTE professional development studies contributed to this effort. It was understood that the CTEDDI system would need to be pilot-tested and iteratively improved, and this took place over the last school year at nine sites in five states. After using the educator and facilitator feedback to make numerous initial refinements, project staff revised the CTEDDI model at the same sites, at additional sites within those states, and with six additional states—educators from a greater variety of program areas and types of schools are participating.

After the completion of this second cycle of model refinement, starting in the 2011-2012 school year, the NRCCTE will offer CTEDDI to states as a technical assistance option. CTEDDI will provide educators from participating states with professional development intended to increase their knowledge and skills in the use and interpretation of assessment data for the purpose of making instructional improvements. The professional development will be delivered by facilitators who will also serve as coaches for the educators as they apply their initial training at their school sites. The implementation will be based to an extent on the very successful technical assistance/professional development models that the NRCCTE already offers related to curriculum integration (Math-in-CTE and Authentic Literacy-in-CTE).

States interested in participating in the professional development should e-mail nrccte@louisville.edu for more details.

A Look at Case Studies of Professional Development

Many participating school administrators clearly have embraced this process as a means of learning how to improve instruction through data and have implemented positive changes as a result. As part of a series of case studies conducted by NOCTI, the practices of several individual schools in a variety of states were reviewed. At one such site, Ray Hasart, director of CTE in the High Desert District of Oregon, noted such an increased interest in the analysis and review of end-of-program technical assessment data that the district doubled its professional development budget to meet the need for data-based improvement.

At another site, Pennsylvania's Reading Muhlenberg Career and Technology Center (RMCTC), director Gerald Witmer mentioned that by tracking a variety of data, including technical and academic assessments and industry certifications, his team can review program trends, adjust curriculum, and work to increase the number of industry certifications awarded. RMCTC now has two coaches to help teachers with academic integration skills in literacy and numeracy. The RMCTC director indicated that the school is more data rich and results-oriented than previously.

Looking to the Future

If the spirit of Perkins, not just the letter, is to be adhered to, it is critical that student achievement data are not simply gathered and reported, but used to inform instruction and make classroom-based improvements that should ultimately lead to higher student achievement. These favorable outcomes depend on educators receiving effective professional development to acquire skills in using and interpreting data from standardized technical assessments that provide meaningful gradient score reports. Such professional development should provide educators with: (1) the knowledge and skills they need to understand and use assessment data for instructional improvements in a manner that meets standards for effective professional development, (2) the tools and resources to apply those skills in their school settings, and (3) the coaching and motivation to work collaboratively to use their skills in a focused and integrated manner.

As educators use data to implement instructional improvements and evaluate the effectiveness of these improvements, their efforts will be more effectively targeted toward the specific needs of their students, programs and schools—resulting in higher quality programs and a more focused use of resources. As instructional improvements become more targeted and effective, the result will be better prepared students entering higher education and the workforce, and long-term gains in workforce quality, productivity and global competitiveness. These are goals important not only to the image and success of the CTE field, but to the nation as a whole. T

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