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Industry Connect
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THREE THINGS TO CONSIDER ABOUT DATA

OUR WORLD REVOLVES AROUND DATA. IT IS IMPORTANT TO BUSINESSES, TO EDUCATION AND TO SOCIETY, AND it is used to minimize risks, identify trends and inform decisions. The process of analyzing data unveils numerous clues that can lead to higher efficiency, better quality and the evidence needed to support goals.

Just as data helps businesses achieve higher efficiency and improve quality, data is equally important to education. Data helps to support education initiatives and can provide valuable information to assist in instructional improvement. There are three characteristics of data that are important to consider:

• Large amounts of data exist.

• Not all data is equal.

• Knowing how to analyze data is critical.

Quantity of Data

Over the past year, the term "big data" has frequented the headlines. With rapid advances in technology, now more than ever there are increasing opportunities to capture unlimited amounts of data. While collecting and storing data is an important first step, what is done with the data is of even more importance. Being able to get access to the data is equally vital. With vast amounts of data available, the thought of beginning any analysis process can be overwhelming.

As a leading provider of industry-based credentials, NOCTI has a wealth of data related to technical test takers and their results. In addition to being able to dissect test data by cluster, pathway, CIP Code and O*Net Classification, the data produced from a NOCTI assessment is analyzable at the local, state and national levels. Test data is collected at the standard level—the level that represents the major topic areas within an assessment. Additional data is collected at the competency level, which is an even more specific area within each standard. NOCTI's assessment blueprints offer more information about the assessment structure and can be accessed at www.nocti.org/blueprint.cfm.

NOCTI furnishes its customers with several options to access the specificity of their data. As part of the standard scoring package, NOCTI supplies individual student scores; classroom averages; and local, state and national averages. Scores are reported by standard, as well as in the form of an overall score. In 2012, NOCTI added competency-level reports to the standard scoring package. This means that for no additional cost, educators are able to take advantage of a report that provides a more gradient analysis for individual students, as well as the class as a whole. If the thought of data analysis seems daunting, customers have the option to purchase through NOCTI analysis services based on customer-identified fields.

Detail of Data

There are various levels of data that are collected by testing organizations. While many collect a vast number of fields, not all impart that same level of detail to the end user. Some organizations simply give a pass or fail indication; others provide only a total score. In some cases, the data is given directly to the test taker without ever making a connection to the instructor. This lack of data hinders the process of instructional improvement. NOCTI is a firm believer in allowing access to data; we know the impact of data, and we want our customers to have the same opportunity to experience the difference data can make. Here are some of the data elements available to NOCTI customers:

• standard-level scores by student and class

• total scores by student and class

• averages for school, state and nation

• competency-level scores by student and class

• industry-established cut scores

• integrated academic analysis

• college credit recommendations

• digital badges

Insight Into Data

With the wealth of data available through the use of NOCTI industrybased credentials, NOCTI encourages its users to focus on data-driven decision making and the positive impact it has in the CTE classroom. NOCTI's Customer Service Team is available to answer general questions regarding data. Archived webinars supply additional detail and are available at the viewer's convenience. Lastly, professional development workshops can be arranged through NOCTI and are offered in a webinar format or in a face-to-face setting.

NOCTI's work with the National Research Center for Career and Technical Education on a comprehensive professional development program called CTEDDI (Career and Technical Educators Using Data-Driven Improvement) is also a valuable resource. This model empowers CTE administrators and educators to use student assessment data to enrich classroom practice, capture student interest and effectively target individual and group learning needs. It is the only data-driven improvement program that is focused first and foremost on technical skills data.

Recently, NOCTI collaborated with ACTE to publish a book focused on the use of data within the CTE classroom. This book, Putting Your Data to Work: Improving Instruction in CTE, explores various aspects of data-driven improvement in instruction, and it specifically targets the importance of gradient-objective technical skill assessment data. Various concepts and "how-to" examples are included in the publication and are valuable for all levels of educators. Purchase the book through ACTE's online bookstore at www.acteonline.org/shop.

Integrated Academic Data

As the nation continues to place focus on implementing the Common Core State Standards (CCSS), CTE teachers nationwide are in the process of determining exactly what that means for their programs. Almost all CTE programs embed academic concepts through an applied process that naturally integrates theoretical concepts into their technical curriculum. Since this process occurs naturally, some CTE teachers have difficulty recognizing the academic content they deliver. CTE instruction moves from simple to complex as student technical competence increases, addressing both cognitive ability and psychomotor skills.

Early on, NOCTI invested resources to align each of its industry-based credentials to the national academic standards for mathematics, science and English Language Arts. Work is currently underway to align NOCTI's assessments to the Common Core. NOCTI currently offers "integrated academic" reports which can provide detail on the math, English Language Arts and science standards embedded within the content area. These reports show the connection between student technical responses and maps them to academic standards. This information highlights another layer of data to assist in developing strategies for instructional improvement.

National, State and Local Data

NOCTI also contributes studentlevel data to assist in identifying individual strengths and areas needing improvement. Because NOCTI assessments are used nationwide, data is also offered at the state and national levels. This data is helpful in comparing student performance with others in their class and state, as well as gauging their performance against students nationwide.

Putting Analysis Into Action

Not knowing how to work with data should not be the factor that stops you from diving in. Once you start working with data and understand more about the ways it is useful in analysis, as well as how to integrate other data resources, you begin to get a better picture of your students and your programs. Effective analysis supplies the evidence needed to ensure that your students are both college- and career-ready, and that they are armed with the skills to be successful in the 21st century.

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