

Using Assessment Data to Improve Instruction for CTE Programs: a National Research Center Professional Development Initiative

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Abstract

I. Description of the study

NOCTI, a partner in the National Research Center for Career Technical Education, is conducting an intervention study to investigate how educators are prepared to use assessment data to improve programs and to target individual and group instructional needs in the secondary-level career and technical (CTE) classroom. Findings from the Year 2 survey research on 1) professional development and 2) educator use of assessment data have been used for the creation of a professional development program, geared toward secondary CTE teachers and administrators, on how to effectively interpret assessment data and use them to make instructional improvements in the classroom.

The term “data-driven decision making” is becoming ubiquitous in education, and yet it seems to be most often discussed with reference to policy decisions related to reporting requirements and accountability. What deserves at least equal attention is, according to Boudett and co-authors at Harvard University, “ what it takes for teachers and administrators to be able to use student assessment results to learn about children’s skills and about the effectiveness of instruction—and then to use that learning to guide instructional improvements.” (Boudett et al., 2005) Relatively few citations specific to career-technical education were revealed in the literature search on the implementation of data-driven decision making with regard to test data The one citation most directly applicable is one that NOCTI commissioned, a white paper entitled “Using Standardized Test Data to Improve Instruction in Career-Technical Education” which discussed the value of standards-based testing, and how students, teachers, schools and states could use the data as a part of improvement efforts (Kister 2002).

A summary of the literature conducted by Smith, Hofer, Gillespie, Solomon, and Rowe (2003) indicated that the effectiveness of different types of professional development is an issue of much debate, and that philosophies about how professional development should be delivered have been shifting away from more traditional models, such as workshops, toward such models as study circles, coaching, collaborative problem-solving groups, and practitioner inquiry. In the case of professional development specifically geared toward the use of assessment data, factors such as strong work connection, links to comprehensive change processes, and strong teacher involvement seem especially important, given the increasing use of scores on achievement tests in high-stakes conditions (Klein, Hamilton, McCaffrey, & Stecher, 2000).

Unfortunately, the available research also indicates that most teachers and administrators do not have the skills necessary to make effective use of data (Cromey, 2000; Dembosky et al., 2005, Schmoker, 2003). This is supported by the findings in the survey conducted by the authors in the initial phase of this project. In that survey, over 46% of the administrators responding indicated that their teachers had not received general professional development in the use of technical assessment data. Among teachers, of those who used data to make instructional decisions, over 30% indicated that they were self taught (Foster et al., 2009).

Three research questions are at the center of the study:

1. Have educators increased their knowledge about technical assessment data as a result of the professional development intervention?
2. Are educators able to apply their knowledge of technical assessment data to improve instruction as a result of the professional development intervention?
3. Will educators be more motivated to apply their learning about technical assessment data to instructional improvements as a result of the professional development intervention?

The project methodology involves project staff creating the professional development intervention on analysis, interpretation, and application of technical assessment data with a target audience (population) defined as educators (teachers and administrators) of secondary CTE programs, as they were the subjects of the Year 2 study and those whose needs were researched. Facilitator materials were developed to include educator materials plus training in the mentoring and coaching they will do with educators at their school site and by web conference. Facilitators (one per pilot state) were trained first, and then they worked with the educators, who were given a pretest on the content of the materials. In the interactive training and during the subsequent mentoring, educators used data from their own students, who took a contributed NOCTI standardized technical skills assessment in their program area. Instruments developed to evaluate the pilot test include a content pre and posttest, a questionnaire for self-report of educator perceptions, and a facilitator survey.

II. Development of the intervention

The professional development materials were developed by project staff, based on the survey findings from the previous year and sources from the literature. After multiple internal reviews and revisions of the Facilitators' Guide and the related worksheets and PowerPoint, the materials were reviewed externally. A review response form was developed to encourage some standardization in the form of the responses. The participants were sent information by email about the purpose of the study, the methodology, and the objectives of and process for the type of review they had agreed to. After receiving the detailed reviews from these experts, the materials were revised on the basis of their input and suggestions. The materials were submitted for IRB approval, which was granted. Finally, the materials submitted to the Office of Vocational and Adult Education (OVAE), U.S. Department of Education, and approved with suggestions. However, the materials are undergoing iterative improvement as the project proceeds, so as to capture and evaluate the input available from the facilitators, participants, and the ongoing literature review.

An important aspect of the professional learning is the development of a community of practice among the educators participating in the project. A means of communication more flexible than group emails was sought, so as to have the capacity to upload documents such as action plans and descriptions of implementation strategies, and yet have the site be secure and private. After examining various social networking sites, NOCTI decided to build such a site as a contribution to the project. This was completed before the Facilitator Training so it could be

discussed at that time. It offers the capacity to have a threaded conversation as well as to make resources available to all on the project. The site is proving very helpful.

III. Pilot site selection and professional development implementation

The sample piloting the professional development on use of assessment data consists of the administrator and a total of 2-4 teachers from each of nine selected schools, which were selected from among those who participated in the Year 2 survey in five states (Illinois, Missouri, Oklahoma, Pennsylvania, and Virginia). The total sample size is 48 individual educators.

Five of these were Round 1 of the pilot and four in Round 2, starting a month later so as to allow for application of learning from Round 1. The selection criteria were based on survey findings and in part on phone interviews with the administrator and a pilot site visit. The first priority was to select sites from among those who participated in the current Year 2 survey. Schools seen as most suitable included those with (a) multiple CTE programs from among Business Education, Construction, Health Science, and Manufacturing, which were the occupational clusters used for the survey study, (b) an interest in improving their use of data for decision making, and (c) the willingness to participate in the training, coaching, and data collection phases of this project. Schools meeting these criteria were culled from the survey responses and then discussed with the CTE State Director to get input on suitability and on other factors operating within the state.

Project staff developed a site call protocol to assure that all the relevant information, including both the responsibilities and the benefits for participation, would be conveyed to the administrator of each of the potential pilot sites. A single member of the project staff was designated to make the calls to gain some standardization of approach. After these calls, the sites that responded positively were visited to gain a more thorough understanding of the intentions and potential for the pilot site to be responsive to the initiative and to offer a more complete picture of the project and the details of the educators' involvement directly to the educator team.

Facilitators (one professional resident per pilot state) were selected by the project staff based on their skill and experience with training and informal coaching/mentoring and their willingness and availability to participate in all phases of the project. Facilitators were trained on the material, the delivery methods, and subsequent follow-up strategies in a face-to-face meeting. During this meeting, provision was made for additional refinements to the delivery plan where appropriate.

Facilitators have implemented the professional development intervention at the sites as intended, including the initial workshop and subsequent on-site mentoring meeting. A major activity, based on analysis of the student assessment data, was the formation and improvement of an action plan for each participant to implement in the classroom. Facilitators have assisted the educators in how to carry out the plan and then monitor the outcomes.

IV. Future directions and findings

The findings resulting from this project will contribute to improvement of practice in career and technical education. It seems essential that if technical assessments are to be taken by students for the purpose of measuring achievement, the resulting data should be used, not only for accountability needs, but also to assist educators in improving programs and individual instruction to encourage higher achievement. The professional development offering, iteratively

improved over the course of the project, will be offered nationally in future years and is expected to be of great benefit in assisting the field in promoting student achievement through application of insights from technical skills assessment data.

References

- Boudett, K. P.; Murnane, R. J.; City, E.; & Moody, L. (2005). Teaching educators: How to use student assessment data to improve instruction. *Phi Delta Kappan*, 86(9) 700.
- Cromeey, A. (2000, November). *Using student assessment data: what can we learn from schools?* (Policy Issues Brief No. 6). Oakbrook, IL: National Central Regional Educational Laboratory. Retrieved on March 27, 2009, from http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/17/00/ea.pdf.
- Dembosky, J. W., Pane, J. F., Barney, H., & Christina, R. (2005, December). Data driven decisionmaking in southwestern Pennsylvania school districts (RAND Working Paper WR-326-HE/GF). Santa Monica, CA: RAND Corporation. Retrieved on March 26, 2009, from http://www.rand.org/pubs/working_papers/2006/RAND_WR326.pdf.
- Foster, J., Pritz, S. & Kelley, P (2009). Professional development for educators on the use of assessment data. Louisville, KY: National Research Center for Career and Technical Education, University of Louisville.
- Kister, J (2002). Using Standardized Test Data to Improve Instruction in Career-Technical Education, a white paper commissioned and published by NOCTI.
- Klein, S., Hamilton, L., McCaffrey, D., & Stecher, B. (2000). *What do test scores in Texas tell us?* Santa Monica, CA: RAND.
- Schmoker, M. (2003). First things first: demystifying data analysis. *Educational Leadership* 51(1), 22-24. Retrieved on March 27, 2009, from <http://mikeschmoker.com/data-analysis.html>.