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

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Primary Topics

- Data-driven decision making in career-technical education
- Professional development related to use of technical skills assessment data
Need

- Data-driven decision making is much discussed but most often with reference to reporting requirements and accountability.
- Of equal importance is to use the data to improve instruction of students.
- Little research specific to CTE on teachers and administrators implementing data-driven decision making on the basis of technical skills test data.
- Once some research shows the contours of the issues, professional development might be able to assist in enabling improvements.
Objectives—year 2 survey

- Investigated secondary CTE educator use of technical assessment data to inform instructional decisions and sources of their knowledge that enables them to do so.

- Examined the types of professional development that CTE educators have received related to the primary objective and how they have been applied.
Study Design

Survey research in 5 selected states with 4 selected CTE clusters:

- Manufacturing (welding),
- Business (accounting)
- Health Services (nurse assisting)
- Construction (carpentry)

Survey emailed to all CTE center directors and a sample of comprehensive high school CTE directors with the 4 selected programs.
Some Findings

- Respondents indicated a large majority use end-of-program tests
- About 1/3 have not received any PD on data use
- Respondents felt training with follow up was needed
- Data interpretation high on the needed skill list
- Peer interaction would be desired in delivery of PD
- Case studies show positive gains
Objectives–Year 3

- To develop and pilot a highly interactive professional development intervention that meets the criteria established in the survey, in our literature search, and in the other NRCCTE professional development project work.
- To pilot the intervention in the same five states as surveyed in year 2.
- To iteratively improve the intervention between Rounds 1 and 2 of the pilots.
Research Questions

- Have educators increased knowledge on Technical Assessment?
- Can educators apply new knowledge?
- Will educators be motivated to continue to apply new knowledge?
The Professional Development Paradigm in Practice from the Math-in-CTE Study (Pearson et al.)

**Old Model**
- A box of curriculum
- Short term “training”
- Little or no support after the “sage on the stage” goes away
- Replicable by individual teachers (assumed)

**New Model**
- Process, not an event
- Built on communities of practice
- On-going support; the learning curve
- Teams of committed teachers working together over time
Methodology and Sample

- Drafted and had multi-level reviews of professional development (PD); revised
- Delivered to 5 states (9 sites) through in-state facilitators
- Started 3 sites early and collected iterative data for PD refinement
Facilitator Selection and Training

One facilitator selected per state with:

- recommendation of the State CTE Director
- experience in delivery of professional development
- experience with schools in the state
- time available as a consultant

Trained as a group with:

- a two day in-person workshop
- an opportunity to give input to the PD materials and process
Methodology and Process

- Used a social networking site as a means of building a community of practice
- Used pre-test, post-test, questionnaires, facilitator surveys, self-reported perceptions
- Involved 48 individual educators
Instructional Improvement Cycle

5 Steps

- Collect Data
- Analyze Data
- Verify & Corroborate
- Design Action Plan
- Implement Plan & Review Outcomes (ONGOING)

To improve learning and instruction

Workshop Goals

LEARN TODAY:

- Data sources available
- How to use data
- Assessments (types of assessment, terminology, how assessments are developed)

OUTCOME of Workshop:

Action Plan
To improve learning and instruction
Sample Content of Educator Training

- Common assessment terms
- Sample reporting formats
- Methods of interpreting data
- How to interpret data in an applied setting
- External factors that can impact test scores and trends over time
- Strategies for using data
- Emphasis on interactive activities, contextualized to participants’ own school, follow up in terms of an action plan
Step 4: Design an Action Plan Final
Worksheet 5: Prioritize

Name: Program: Business Administration School:

Directions: From your program’s baseline (pretest) data, develop goals and performance targets; determine the indicators of success and whether new practices need to be implemented as part of the next steps and timing. Use information and data sources identified in the previous worksheets for this exercise.

Overall Goal: To further improve the technical competency of the KTC McAlester Business Administration program using evidence from class results on the NOCTI and ODCTE state competency test.

Summarize the strengths in your data: My program’s data shows strengths in the areas of computer applications, working in an office environment, and office procedures.

Summarize the weaknesses or gaps between the status and the standards your program or school needs to achieve: The class has weaknesses in the areas of accounting and computational skills and records management.

<table>
<thead>
<tr>
<th>Prioritize desired short term</th>
<th>Data Required:</th>
<th>Indicators of Success:</th>
<th>Steps for current school year:</th>
<th>Strategies for groups or individual students</th>
</tr>
</thead>
</table>
**Educational Resource Articles**

- DesignActionPlanFinal.docx
  - mark.jett

- Form for Credit.jpg
  - sandy.pritz

- Course credit through Oklahoma State University.docx
  - sandy.pritz

- Statistical resources for data.doc
  - carol.hodes

- Data plan narrative.doc
  - carol.hodes

- Step 4 Worksheet 5 Final.doc
  - carol.hodes

- NOCTIWhitePaper.pdf
  - sandy.pritz

- Dreams1.jpg
  - david.hall

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**Type comment here, then click Add Comment to post a message...**

**Add Comment**

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**Health Occupations people, how are you using Nocti Pretest data?**

--- beth.rhomestine 3/17/10

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**Received my first homework assignment. Looking for carpentry instructors willing to discuss NOCTI strategies utilizing Pre-Test data to improve instruction. We have created some helpful NOCTI driven curricular documents in the School Dist. of Phila. recently that are aiding us in focusing the carpentry, electrical and plumbing programs in an organized framework. Hope we can be helpful.**

--- Patrick.durkin 3/16/10
Follow-up (webinar, visit, phone)

Purpose:
- To provide mentoring for implementation of action plans
- To share strategies that are working
- To identify any barriers

Questions:
- What is going well?
- What are your challenges?
- What has been the reaction by students?
- What additional resources do you need?

Next Steps:
- Continue to implement action plan
- Make notes of any successes or barriers
- Share on the professional sharing site
Self-Reported Skill

Rate the degree of skill you feel you personally have in using technical assessment data for classroom improvement.

- Very skilled
- Adequate for my needs
- OK, but I could use some improvement
- I know a little but could use a lot of improvement
- Not at all skilled

[Bar chart showing responses by Teachers and Administrators]
Post-Workshop Comments

- “Our school will utilize assessment analysis to modify instruction and planned improvements.”
- “We will collaborate more on looking at assessment data and planning for improvements in instruction.”
- “Looking at performance as a group and establish trends to address rather than just at individual performance.”
- “As an administrator, I plan to utilize practices learned to bring instructors together and to share ideas.”
- “Hopefully, we will be able to take it back to our PLC and CSD teams so that all of our teachers will become more comfortable with utilizing data to improve student learning.”
Post-Workshop Ratings (1=strongly disagree, 6=strongly agree)

- Content of the workshop was relevant
- Materials will be useful in my school setting
- Activities focused on solving real problems in my classroom
- The overall quality of the content and materials was excellent
- This changed the way I will work to improve student achievement
- As a result of this professional development:
  - My knowledge increased
  - My data skills increased
  - My abilities increased
  - My attitude changed
- I feel that this professional development will be:
  - Applied in my classroom
  - Easy to adapt for my purposes
  - Helpful in planning for improved learning
- This professional development will impact:
  - How I teach
  - How I plan instruction
  - Student learning outcomes
  - The way I monitor student progress
I think I will continue to use technical assessments for instructional improvements *during* this project.

Scale 1 (strongly disagree) to 6 (strongly agree)

<table>
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<th></th>
<th>Mean</th>
<th>SD</th>
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</thead>
<tbody>
<tr>
<td>Overall</td>
<td>5.00</td>
<td>0.92</td>
</tr>
<tr>
<td>Administrators</td>
<td>5.25</td>
<td>0.75</td>
</tr>
<tr>
<td>Teachers</td>
<td>4.89</td>
<td>0.97</td>
</tr>
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I think I will continue to use technical assessment data for making instructional improvements *after* this project.

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<td>5.33</td>
<td>0.78</td>
</tr>
<tr>
<td>Teachers</td>
<td>4.78</td>
<td>1.08</td>
</tr>
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</table>
Successes reported

Educators saw positive improvements based on the instructional changes they had made, such as:

- reviewing areas of general weakness,
- finding new materials and resources to use with the students,
- adding to the curriculum or changing curriculum timing,
- assisting or getting assistance for individual students to address weaknesses.

Several also commented that knowing there was a study going on and seeing their pretest data seemed to motivate their students.
Some Final Survey Results

- Felt skill in using data had increased
- Felt these skills had been applied in the classroom
- Felt biggest impacts were on planning instruction and monitoring student progress
- Participants were comfortable working with their facilitators
- Participants felt they had made adequate progress on action plans, given time constraints
- Saw technical assessment data as a useful tool, and felt they would continue to use data after the project was concluded
Successes Educators Mentioned

- Improvements based on spending more time areas where students were weak
- Changes to curricula based on test results
- Positive results seen in classroom based on changes
- Increased test scores at posttest
- Increased student interest
Some Planned Improvements

- Intervention spread out over longer timeframe
- Altering the timeline of the program so that the initial workshop occurs early in the school year and the mentoring time is increased
- Possibly lengthening the initial workshop, or moving certain elements into more structured mentoring activities.
- Incorporating more administrator-specific exercises into the workshop
Some Planned Improvements (cont.)

- More structure for the mentoring portion of the process (including a calendar of sorts for facilitators, structured exercises and activities for facilitators to use with teams during the mentoring process)
- More scheduled meetings and contacts between facilitators and teams
- More suggestions for inter-site activities and discussions for facilitators to employ where appropriate
- More structured activities to encourage inter-school conversations via the sharing site
Objectives—year 4

- To improve upon the PD intervention
- To continue to measure its function
- To conduct educator reviews of the PD
- To market future technical assistance
Methodology and Sample

- Iteratively refine PD and have reviewed in the 9 existing sites in the 5 states, through in-state facilitator
- Conduct reviews of the refined PD at different types of schools in 5 new states
- Market the re-refined PD (now named CTEDDDI) as cost-recovery technical assistance for 2011-12
CTEDDI

Career and Technical Educators
Using a Data Driven Improvement Model

NRC CTE
National Research Center for Career and Technical Education
Interested in information about sending a team from your school when we offer the PD in 2011-12?

- Because school budgets are often developed by February or March of the previous year, we are trying to think ahead!

- Email nrccte@louisville.edu a message with NOCTI-NRCCTE PD in the subject line indicating your interest. Be sure to include your full name, school and address, and your phone number. We will contact you when the details are available.
Professional Development - Publications


Visit http://www.nrccte.org/

To discuss your questions, email Sandy.Pritz@nocti.org or Patricia.Kelley@nocti.org

www.nocti.org

Thank You for Coming!
Your questions?