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

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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.

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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

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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?

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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

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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

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Instructional Improvement Cycle

5 Steps

Workshop Goals

LEARN TODAY:

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

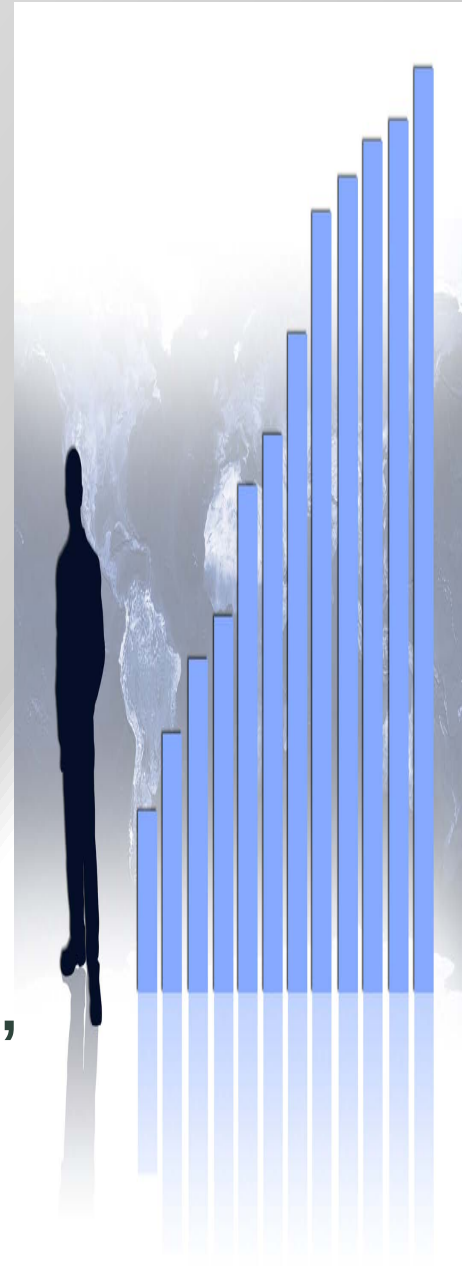
OUTCOME of Workshop:

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.

Prioritize desired short term	Data Required:	Indicators of Success:	Steps for current school year:	Strategies for groups or individual students

Professional Development Sharing Center

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Educational Resource Articles

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NRCcte Site Coordinator Training

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

Add Comment

Health Occupations people, how are you using Nocti Pretest data? --- ***beth.rhymestine*** 3/17/10

(0) View/Create Threaded Conversation

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

(0) View/Create Threaded Conversation

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

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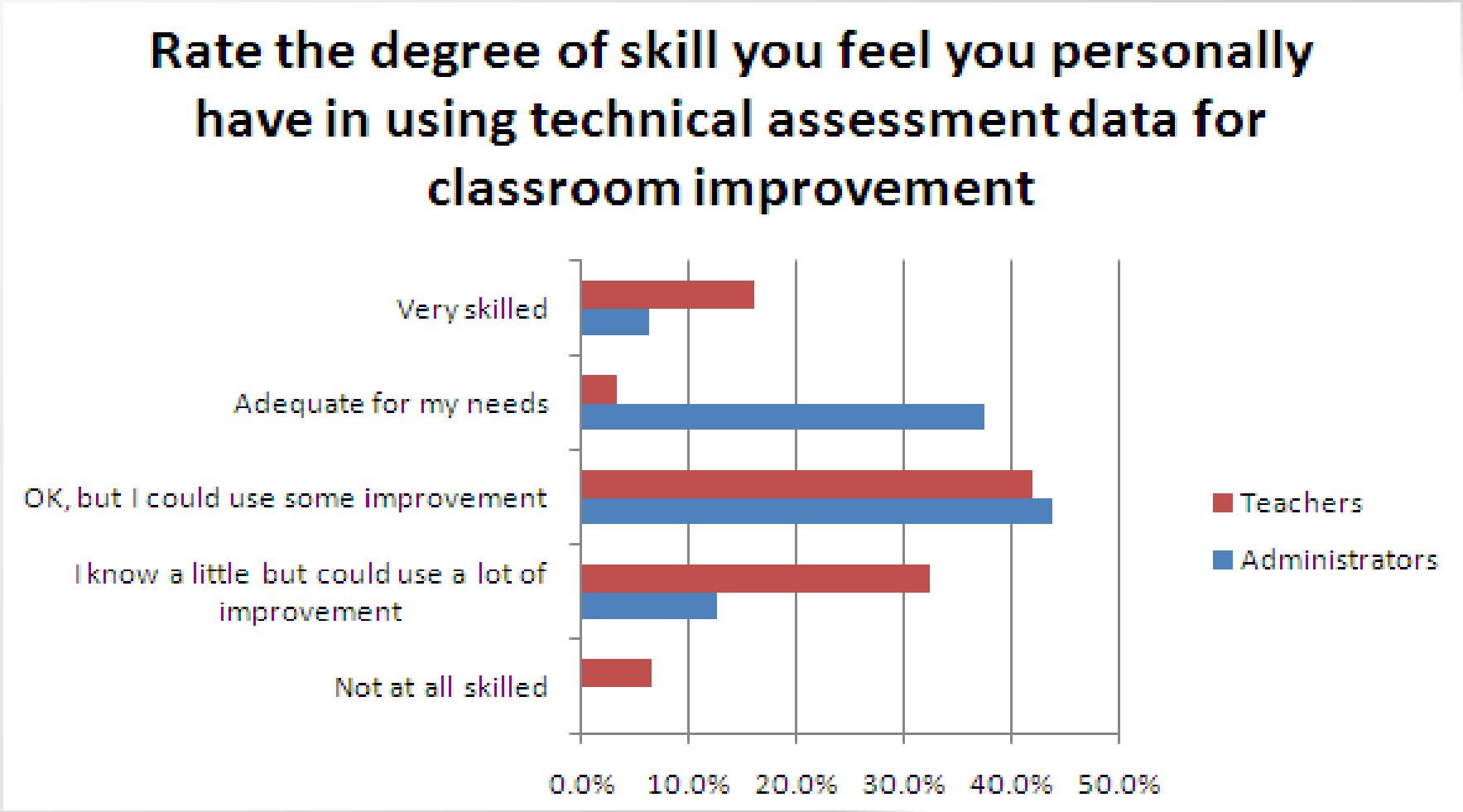
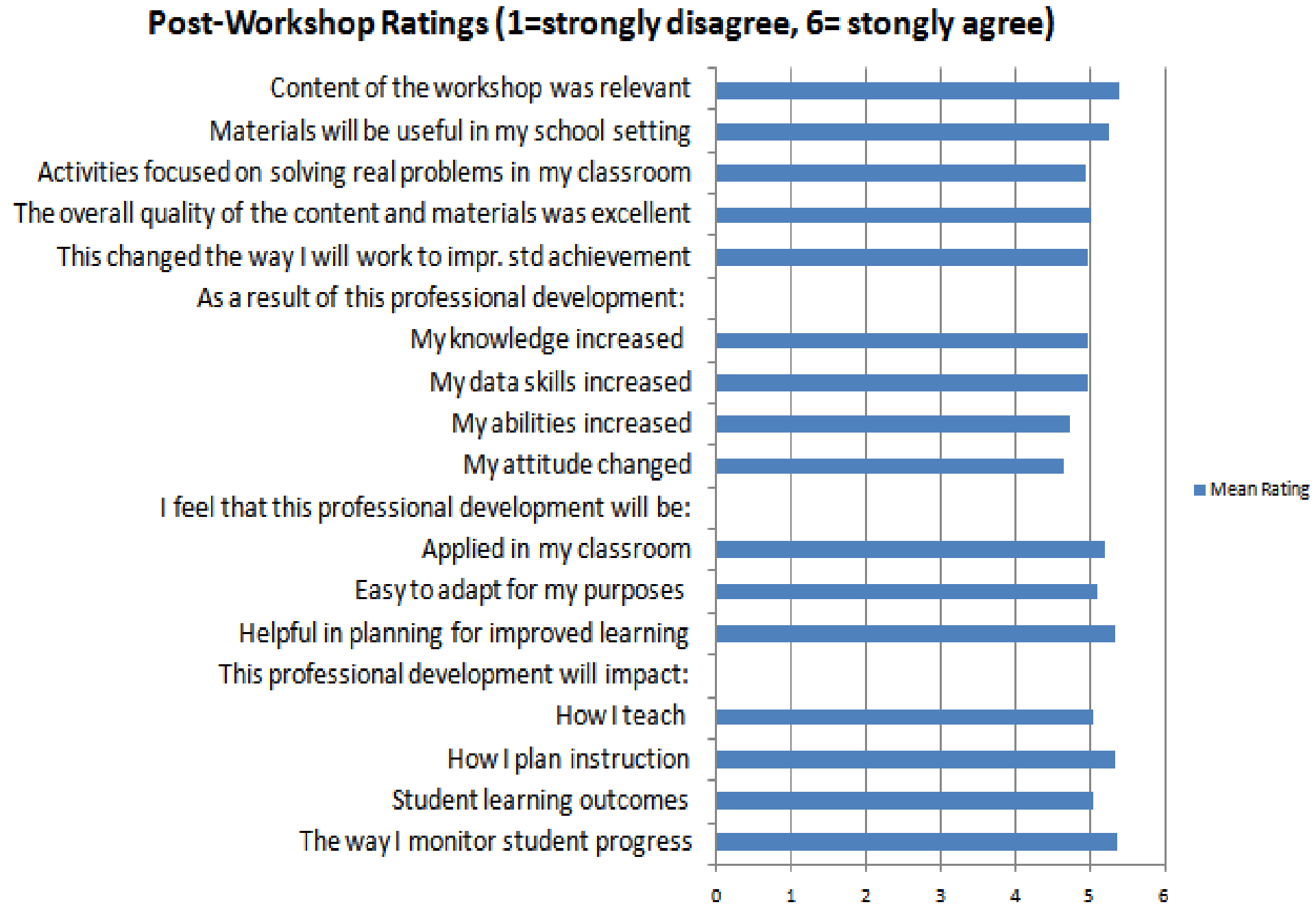
Self-Reported Skill



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= stongly 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 impr. std 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
0
1
2
3
4
5
6
Mean Rating

I think I will continue to use technical assessments for instructional improvements *during* this project.

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

	Mean	SD
Overall	5.00	0.92
Administrators	5.25	0.75
Teachers	4.89	0.97

I think I will continue to use technical assessment data for making instructional improvements *after* this project.

	Mean	SD
Overall	4.95	1.03
Administrators	5.33	0.78
Teachers	4.78	1.08

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.

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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

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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 CTEDDI) as cost-recovery technical assistance for 2011-12

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CTEDDI

Career and Technical Educators Using a Data Driven Improvement Model

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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.**

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Castellano, M., Harrison, L., & Schneider, S. (2008). State secondary CTE standards: Developing a framework out of a patchwork of policies. St. Paul, MN: National Research Center for Career and Technical Education. (PDF, 1,049KB)

Lewis, M. V., & Pearson, D. (2007). Sustaining the Impact: Follow up of Teachers Who Participated in the Math-in-CTE Study. St. Paul, MN: National Research Center for Career and Technical Education. (PDF 1,139KB)

Stone, J. R., III, Alfeld, C. Pearson, D., Lewis, M. V., & Jensen, S. (2006). Building academic skills in context: Testing the value of enhanced math learning in CTE (Final study). St. Paul, MN: National Research Center for Career and Technical Education. (PDF 3,181KB)

Stone, J. R., III, Alfeld, C. Pearson, D., Lewis, M. V., & Jensen, S. (2005). Building academic skills in context: Testing the value of enhanced math learning in CTE (Pilot study). St. Paul, MN: National

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Thank You for Coming!

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Your questions?