

NRCCTE/NOCTI Professional Development Project: Using data to Improve Programs

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**NOCTI Round Up Your
Data Conference
ACTE, Las Vegas, Nevada
December 1, 2010**



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Career and technical education is recognized as integral to reaching the President's goals by:

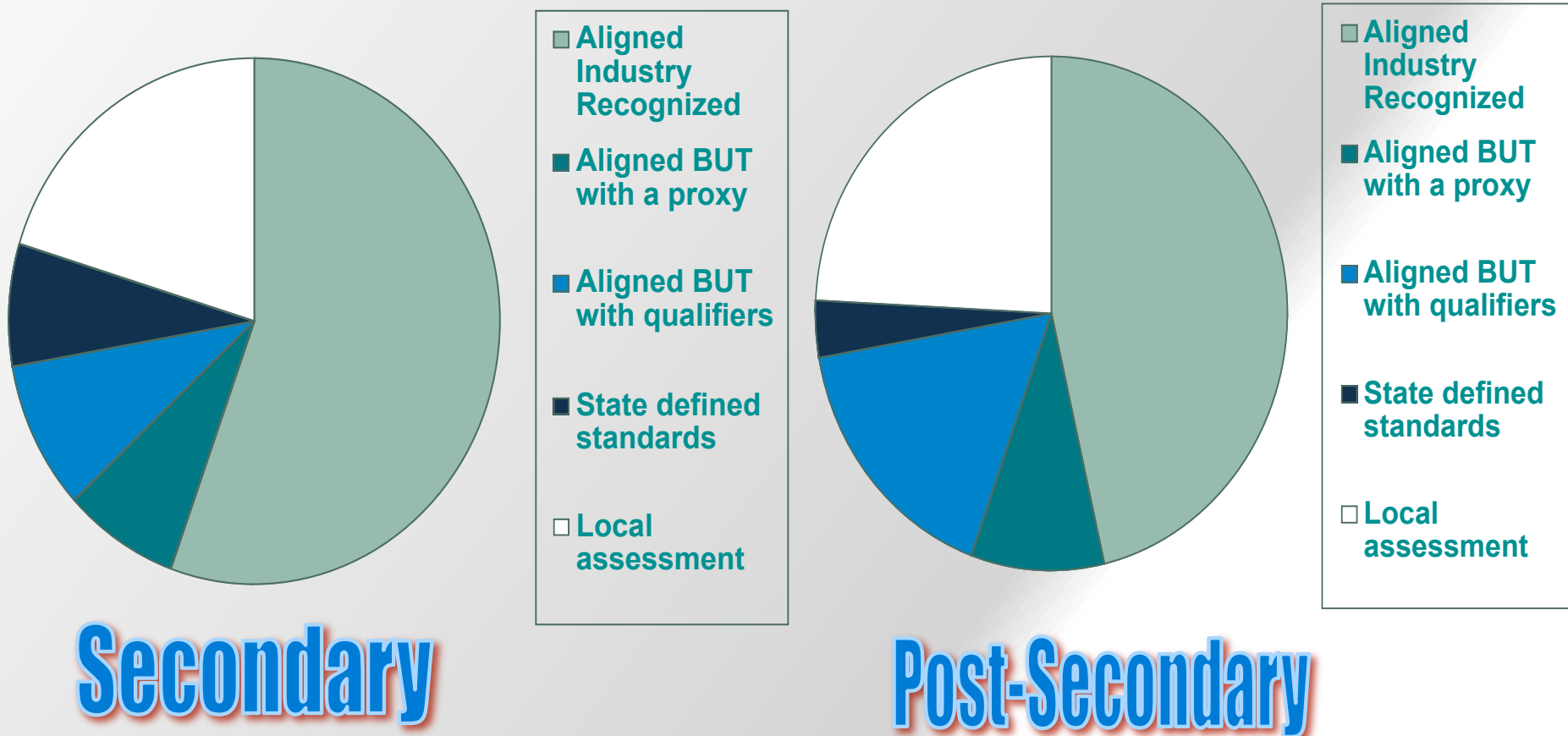
- ***Engaging students***
- ***Making learning rigorous and relevant***
- ***Building capacity***
- ***Creating strategic partnerships***

The Assistant Deputy Secretary, Brenda Dann-Messier, reinforced this by challenging CTE to:

- **Promote the adoption of industry-validated and internationally-benchmarked academic and technical standards and related proficiency-based assessments.**
- **Develop and support contextualized learning models that blend academic and technical curriculum.**
- **Develop tests and performance-based assessments.**
- **Use diagnostic, interim, and proficiency-based assessments to accelerate progression.**

Perkins Year 2 includes 50 states and 4 territories

National progress in technical competence



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Educational Leadership

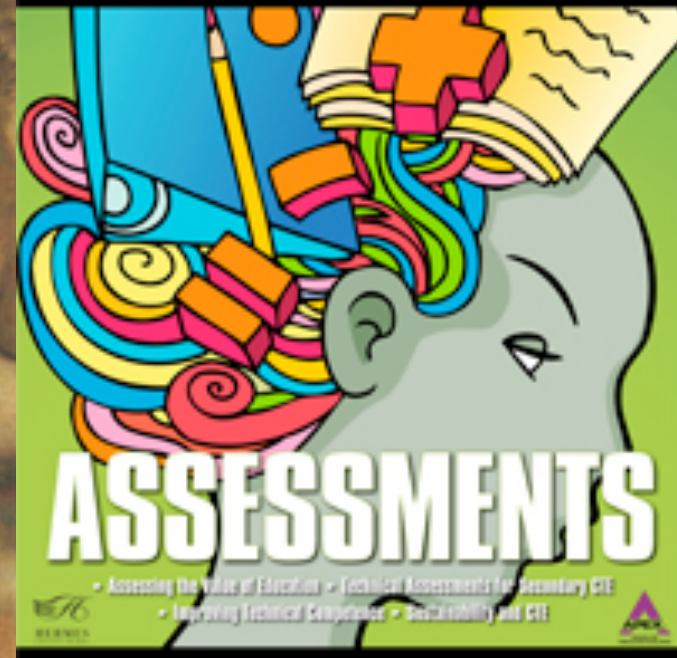
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Techniques

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ASSESSMENTS

- Assessing the Value of Education • Technical Assessments for Secondary CTE
- Improving Technical Competence • Sustainability and CTE



PUBLISHED BY THE ASSOCIATION FOR CAREER AND TECHNICAL EDUCATION

ASSESSMENTS



Improving Technical Competence:

How the CTE Community is Responding

Data

Now what?

We have the data, BUT do we know what it means AND how to interpret it?

The research says NO!



Our First Year (2008- 09)

- **We 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**

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

CTE Needs:

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



Benefits:

- Improved instruction
- Improved accountability
- Improved content
- Improved transparency
- Improved technical competence
(Global competitiveness)

Our Second Year (2009-10)

- **We developed and piloted a highly interactive professional development intervention that met the criteria established in the survey, in our literature search, and aligned with other NRCCTE professional development work**
- **We piloted in five states within 4 clusters**
- **We focused on continuous iterative quality improvements**



The Professional Development Paradigm in Practice from the Math-in-CTE Study (Pearson et al.)

Old Model

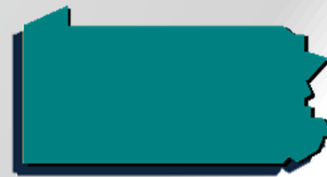
- A *box* of curriculum
- Short term “training”
- Little or no support after the “sage on the stage” goes away
- Replicable by individual teachers (assumed)

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**

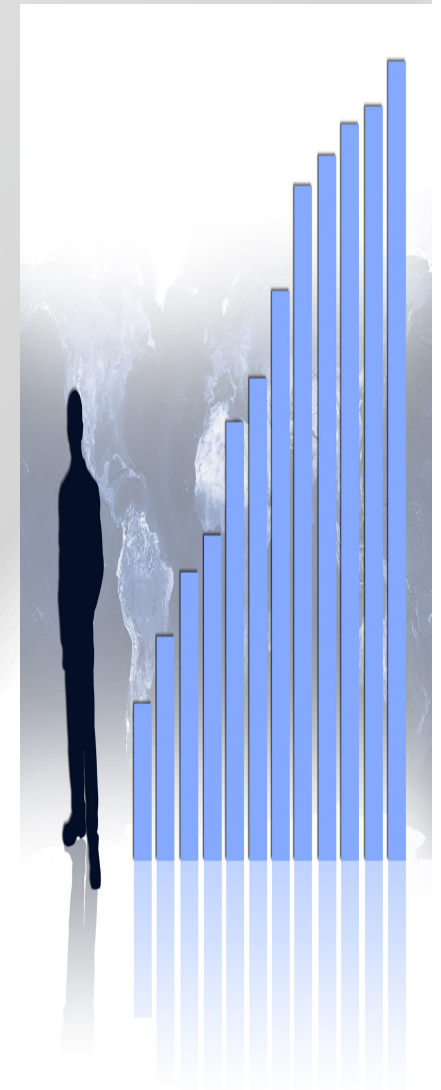
Components:

- Research-based professional development package
- In-state facilitators
- Communities of learners
- Electronic social networking site
- Ownership of the data (pre-test/post-test)



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**



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

Professional Development Sharing Center

cte



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Teacher
Clearfield, PA

Health Occupations people, how are you using Nocti Pretest data? --- [beth.rhymestine](#) 3/17/10

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Teacher
Swenson, PA

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

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Questions Used Differentiating Term and Interpretation

3. Which of the following is the best description of a valid test?

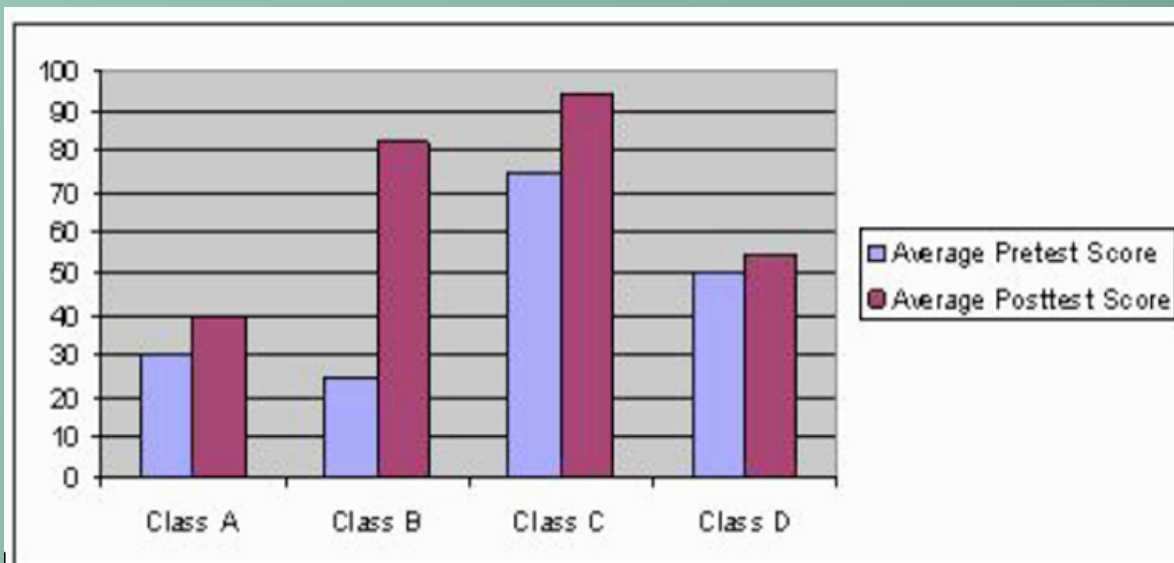
- A. Most students achieve a similar score on the test
- B. The test yields consistent results if given at different times
- C. The test measures what it is supposed to measure
- D. Most students achieve a passing score on the test

5. Which of the following statistics is always equal to the 50th percentile?

- A. Mean
- B. Median
- C. Standard Error
- D. Standard Deviation

Questions Used Differentiating Term and Interpretation

8. An administrator is reviewing a summary of student pre-test and post-test scores on a carpentry exam, which has summarized the data by class. According to the graph below, which class showed the greatest improvement?



- A. Class A
- B. Class B**
- C. Class C
- D. Class D

Questions Used Differentiating Term and Interpretation

16. Hector is looking at pre-post test data for a class that just graduated. Based on the information in the table, which of the following topics should he be most concerned about when considering making instructional changes for future classes?

| Written Test | Pre-Test | Post-Test | % Change | National Average |
|------------------------------------|----------|-----------|----------|------------------|
| Arrest and Search Procedures | 50.5% | 55.0% | 5.0 | 58.2% |
| Investigation/Crime Scene Process | 62.1% | 72.4% | 10.3 | 54.5% |
| First Aid/CPR | 38.5% | 61.5% | 23.0 | 53.6% |
| Public Relations and Ethics | 45.7% | 52.4% | 6.7 | 50.0% |
| Hazardous Materials/General Safety | 85.5% | 85.5% | 0.0 | 80.2% |
| Police Concepts and Skills | 75.0% | 85.00% | 10.0 | 84.4% |

A. Arrest and Search Procedures

B. First Aid/CPR

C. Public Relations and Ethics

D Hazardous Materials/General Safety

Exercise example

Case Study: Carpentry Class Test Data

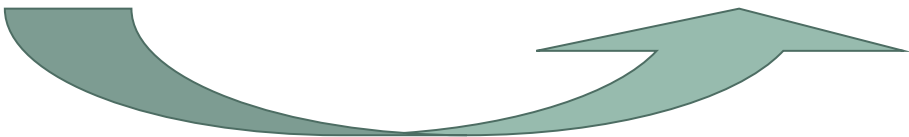
| Test Areas: | Participant | Group (class) | Site (school) | State | Nation |
|-----------------------------------|-------------|------------------|------------------|-------|--------|
| Safety | 100.0 | 86.4 | 79.5 | 72.5 | 75.5 |
| Tools and Accessories | 91.7 | 79.2 | 78.2 | 70.7 | 70.6 |
| Blueprints Reading and Estimation | 100.0 | 95.0 | 83.8 | 64.3 | 66.4 |
| Foundation, Forms and Concrete | 92.3 | 69.2 | 65.8 | 51.6 | 52.9 |
| Rough Framing | 97.4 | 71.8 | 69.8 | 63.1 | 64.1 |
| Exterior Finish | 91.7 | 64.6 | 67.6 | 58.1 | 57.8 |
| Interior Systems Installation | 87.5 | 53.1 | 61.9 | 55.6 | 56.5 |
| Interior Finish | 87.5 | 70.7 | 75.6 | 66.6 | 67.0 |
| Carpentry-Related Mathematics | 100.0 | 56.2 | 68.2 | 66.1 | 67.0 |
| Total | 94.3 | 72.0 | 71.4 | 62.7 | 63.4 |

Analyze the Data:

Based on the assessment results above, what would you do first if this were your 12th grade class?

List the successes and problems you see on this table that warrant further investigation:

| Test Title | Number of Pre-Tests | Pre-Test Average | Number of Post Tests | Post Test Average |
|---|---------------------|------------------|----------------------|-------------------|
| Automotive Technician - Core | 28 | 46.5 | 25 | 52.9 |
| Carpentry | 22 | 55.2 | 19 | 76.1 |
| Computer Repair Technology | 15 | 58.9 | 14 | 66.4 |
| Electrical Construction | 10 | 40.9 | 12 | 47.1 |
| Health Assisting | 36 | 64.6 | 34 | 77.2 |
| Logistics Technology/ Distribution Center Services | 13 | 49.8 | 7 | 79.3 |
| Pre-Engineering | 15 | 52.3 | 16 | 60.0 |



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.

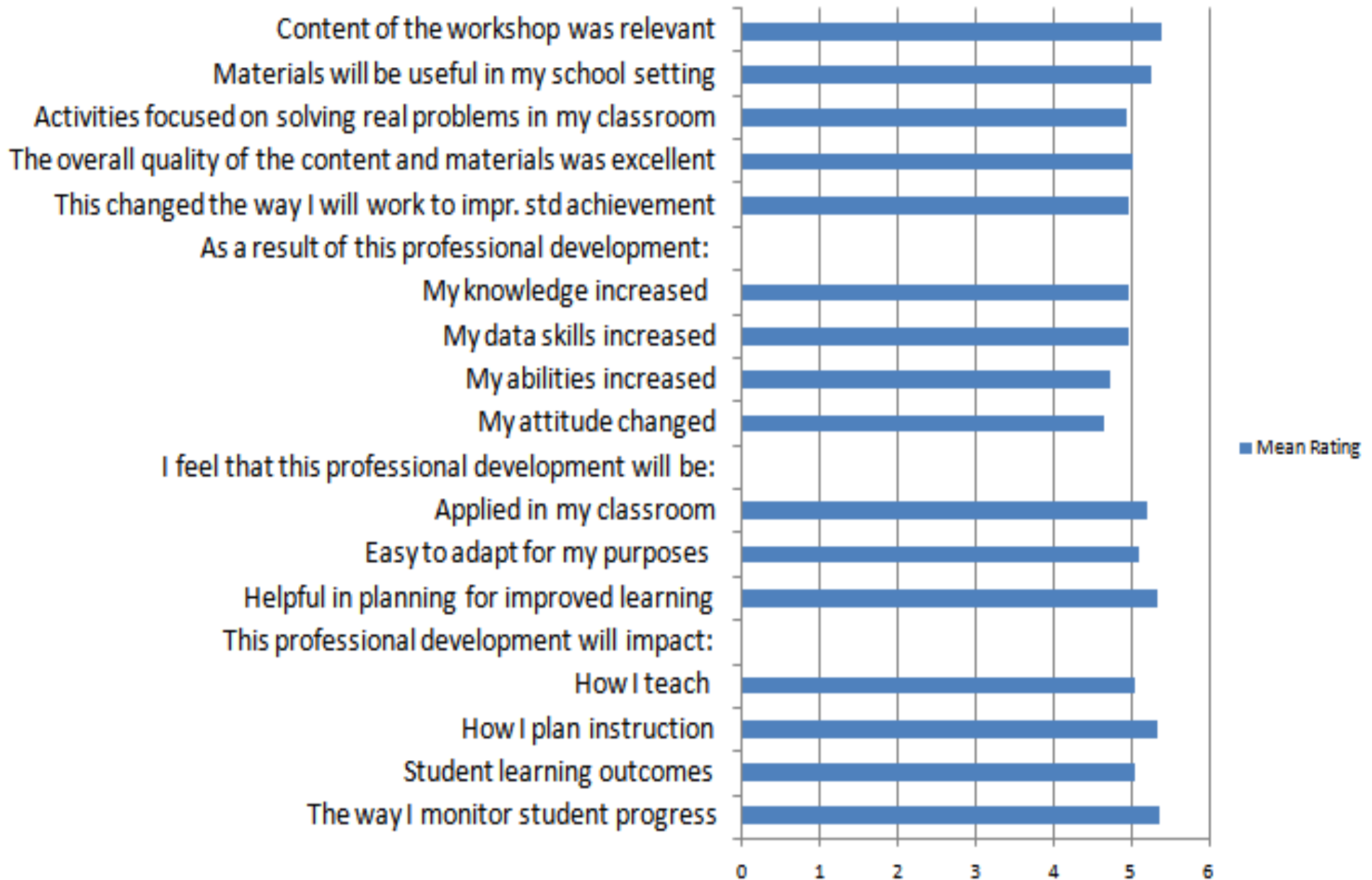
Summarize the weaknesses or gaps between the status and the standards your program or school needs to achieve: The class has weaknesses in the areas of accounting and computational skills and records management.

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

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)



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.**

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 Mentioned (Anecdotally)

- 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**

This year's work (2010-11)

- 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 7 new states
- Market the re-refined PD as cost-recovery technical assistance for 2011-12.





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Professional Development for Educators on the Use of Assessment Data

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Patricia Kelley, NOCTI

Carol Hodes, NOCTI



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Donna Pearson, University of Louisville

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The NRCCTE visited Los Angeles Trade-Tech College (LATT) to learn more about its groundbreaking green workforce education programs, commitment to serving the needs

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NOCTI PD on Assessment Data Use: Case Study with Aldo Jackson of Erie Co. Technical School

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Use of Assessment Data at High Desert Education Service District - A Podcast with Ray Hasart

July 29th, 2010 · No Comments

Catherine Imperatore recently spoke with Ray Hasart, the CTE Regional Coordinator for Oregon's High Desert Education Service District, on the



Career and Technical Educators Using Data Driven Improvement Model

In an NRCCTE-sponsored research study, NOCTI investigated 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 education (CTE) classroom.

Findings from the research on 1) professional development and 2) educator use of assessment data were used to create a professional development program geared toward secondary CTE teachers and administrators on how to effectively interpret assessment data and use it to make instructional improvements in the classroom.

CTEDDI will be available to states in 2011-2012.

Interested in signing up for your state to participate in the CTEDDI professional development? Email nrccte@louisville.edu with your contact information. We'll get in touch with more details as they develop.



NOCTI's CTEDDI professional development will provide educators from participating states with professional development tools. This program uses proven research strategies to increase a teacher's skills and knowledge in using technical assessment data for instructional improvement.

The professional development will be delivered by facilitators who will also serve as coaches for the educators for applying their initial training at their school sites.

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Jumpstart Programs at Both 2011 CCI, HSTW & ACTE

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