CTE’s Focus on Continuous Improvement through Data-Driven Improvement of Instruction

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Why?

- The economy
- Student learning, motivation and achievement
- School reform
- Public expectations (e.g. Secretary of Education Duncan to NASDCTEc 4/19/11: program effectiveness needs to be more uniform nationally; measures of CTE program effectiveness should be high graduation rates, transitioning students to postsecondary education without remediation, and leading to employment in the field studied.)
Rojewski’s Conceptual Framework for CTE

This figure is from a PowerPoint presentation given by Rojewski to the Kentucky Career and Technical Education Conference, February 5, 2009.
The National Center will improve the engagement, achievement, and transition of high school and postsecondary CTE students through technical assistance to states, professional development for CTE practitioners, and dissemination of knowledge derived from scientifically-based research.
NRCCTE and NOCTI Present

CTEDDI
Career and Technical Educators
Using a Data Driven Improvement Model
What is CTEDDI?

- Training that is highly interactive
- A process, not a one-time event
- Uses data that teachers and schools own
- Builds on the success of an ever-increasing community of practice
- Ongoing state-supported mentorship, local coaches and online help
CTEDDI’s Origin: three years of research and development

- Survey research and literature review
  *How CTE uses data to inform instruction*
- Intervention Development
  - Pilot of the intervention and iterative refinement
  - Extended reviews and model verification
  - Market and viability research
Successes Reported in Pilot Sites

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.
Instructional Improvement Cycle

5 Steps:
1. Collect Data
2. Analyze Data
3. Verify & Triangulate
4. Design Action Plan

To Improve Learning & Instruction

Implement Plan & Review Outcomes

ONGOING
Review of What’s Involved

- Workshop(s) Facilitated by In-State Facilitator
- Internal and External Community of Learners
- Mentoring Through the School Year
- Sharing Center
- A Local Team Approach
- Development and Implementation of an Action Plan

with YOUR data---and what if you obtain additional data? Refine your plan!
Workshop Goals

- Understand data and assessments
- Use data effectively
- Improve learning and skill acquisition for students
- Plan for continuous improvement of learning and instruction
- Share ideas and collaborate with educators in other states as part of a professional learning community
Good Assessments

• Valid
  • Test is relevant and based on current standards
  • Test items measure what they are supposed to measure: the important content or concepts that were taught and that the student must know
  • Subject matter experts develop and evaluate test items
Summative Assessment

- End-of-program or annual test
- Pretests (covering all major content areas) are used to identify entry skills and measure gain
- Broader in scope, for comparison of groups
- Licensing, certification, employment, college readiness or admission
- Required by legislation (e.g., to receive Perkins funds)
Step 2

5 Steps

1. Collect Data
2. Analyze Data
3. Verify & Triangulate
4. Design Action Plan
5. To Improve Learning & Instruction

Implement Plan & Review Outcomes

ONGOING

Analyze Data:
Draw conclusions from data
Classroom Example:

A Carpentry Class
Areas on a Carpentry Test

- Safety: 11%
- Tools and Accessories: 11%
- Blueprint Reading and Estimation: 11%
- Foundations, Forms and Concrete: 10%
- Rough Framing: 5%
- Exterior Finish: 17%
- Interior Systems Installation: 11%
- Interior Finish: 13%
- Carpentry Related Mathematics: 11%
## Carpentry Class Pre-Test

<table>
<thead>
<tr>
<th>Carpentry Pre-test Areas</th>
<th>Student 1 % Correct</th>
<th>Student 2 % Correct</th>
<th>Student 3 % Correct</th>
<th>Student 4 % Correct</th>
<th>Student 5 % Correct</th>
<th>Student 6 % Correct</th>
<th>Class Average % Correct</th>
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</thead>
<tbody>
<tr>
<td>Safety</td>
<td>54.6</td>
<td>45.5</td>
<td>36.4</td>
<td>27.3</td>
<td>27.3</td>
<td>54.5</td>
<td>40.9</td>
</tr>
<tr>
<td>Tools and Accessories</td>
<td>30.0</td>
<td>20.0</td>
<td>10.0</td>
<td>20.0</td>
<td>10.0</td>
<td>30.0</td>
<td>20.0</td>
</tr>
<tr>
<td>Blueprint Reading and Estimation</td>
<td>41.1</td>
<td>17.6</td>
<td>23.5</td>
<td>23.5</td>
<td>29.4</td>
<td>35.3</td>
<td>28.4</td>
</tr>
<tr>
<td>Foundations, Forms, and Concrete</td>
<td>36.4</td>
<td>54.5</td>
<td>45.5</td>
<td>45.5</td>
<td>36.4</td>
<td>54.5</td>
<td>45.5</td>
</tr>
<tr>
<td>Rough Framing</td>
<td>53.8</td>
<td>38.5</td>
<td>30.8</td>
<td>38.5</td>
<td>30.8</td>
<td>53.8</td>
<td>41.0</td>
</tr>
<tr>
<td>Exterior Finish</td>
<td>36.4</td>
<td>36.4</td>
<td>27.3</td>
<td>36.4</td>
<td>36.4</td>
<td>45.5</td>
<td>36.4</td>
</tr>
<tr>
<td>Interior Systems Installation</td>
<td>40.0</td>
<td>60.0</td>
<td>40.0</td>
<td>60.0</td>
<td>60.0</td>
<td>80.0</td>
<td>56.7</td>
</tr>
<tr>
<td>Interior Finish</td>
<td>27.3</td>
<td>9.1</td>
<td>18.2</td>
<td>27.3</td>
<td>9.1</td>
<td>27.3</td>
<td>19.7</td>
</tr>
<tr>
<td>Carpentry Related Mathematics</td>
<td>35.9</td>
<td>45.5</td>
<td>27.3</td>
<td>36.4</td>
<td>36.4</td>
<td>54.5</td>
<td>39.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>40.0</strong></td>
<td><strong>34.0</strong></td>
<td><strong>28.0</strong></td>
<td><strong>33.0</strong></td>
<td><strong>29.0</strong></td>
<td><strong>46.0</strong></td>
<td><strong>35.0</strong></td>
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Step 3

5 Steps
- Collect Data
- Analyze Data
- Verify & Triangulate
- Design Action Plan
- Implement Plan & Review Outcomes

Verify and Triangulate: Other data play a role!
Triangulate Other Data

- Grade levels of 11th grade class on Reading comprehension
- Grade levels of 11th grade class on Vocabulary
Step 4

Design Action Plan: Begin the planning process!

5 Steps

- Collect Data
- Analyze Data
- Verify & Triangulate
- Design Action Plan
- To Improve Learning & Instruction
- Implement Plan & Review Outcomes

ONGOING
**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>
<tbody>
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<td></td>
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</table>
Step 5

Implement the Plan:
Try and share ideas!
Post-Workshop Components

- Follow-up Mentoring and Coaching
- Post-Workshop Activities
- Sharing Center
Follow-up (by 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
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

NRCCTE Site Coordinator Training

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

Revised 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
Benefits of CTEDDI for Continuous Improvement

Educators
- Data-driven instructional improvement
- Improved ability to meet accountability goals
- A positive educational impact

CTE Community
- Practical application of Perkins data
- Logic-based policy tool
- Demonstrate ROI

Everyone
- Increased student achievement
- Enhanced preparation for college and careers
- Gains in workforce competence/productivity
Who Should Participate?

- Statewide, state-determined teams
  - Ongoing support
- Large city school systems
  - Ongoing support
- Local administrators and teachers *
- Individual teachers *
- Those who just plain love data! *

* Jump-Starts or Introductory PD
## Ways to Participate

### Statewide Implementation
- State DOE support
- Use of Sharing Center
- Ongoing mentorship
- Access to evolving resources
- Access to a national network
- Statewide common workshops on data
- Use of real data

### Jump-Start
- Local support
- Access to existing resources (for the Jump-Start days only)
- 2-day workshop on CTEDDI process
- Use of mock data

### Introductory PD
- Access to existing resources (for the day only)
- 1-day (or less) workshop
- Use of a portion of exercise data
The Timeline

<table>
<thead>
<tr>
<th>Month/Date/Timing</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>April 16-18&lt;br&gt;And another later date TBA</td>
<td>National facilitator training for state-designated facilitators and state assessment coordinators (optional). University of Louisville (NRCCTE), Louisville, KY</td>
</tr>
<tr>
<td>August</td>
<td>Prior to start of school</td>
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<tr>
<td></td>
<td>In-state session with the state facilitator, assisted by NRCCTE staff, and administration of up to 10 school districts, teacher teams (voluntary), and the State Department of Education. State facilitator sends a list of participating schools and contact person for each to NRCCTE.</td>
</tr>
<tr>
<td>August</td>
<td>First local pre- or in-service day</td>
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<td></td>
<td>Local administrator explains CTEDDI process, schedules pretest times for entire faculty (a briefing of the 3 to 5 selected program areas prior to this meeting is suggested).</td>
</tr>
<tr>
<td>October</td>
<td>Students pretest and teachers receive pretest data.</td>
</tr>
<tr>
<td>October</td>
<td>Common session on the CTEDDI process for all schools in state. State facilitator, with NRCCTE staff assistance, presents CTEDDI Steps 1-4 to administrator(s) of 10 school districts, teacher teams (for the 3 to 5 program areas), and the State Department of Education.</td>
</tr>
<tr>
<td>October</td>
<td>Individual Action Plans (for the 3 to 5 program areas) are drafted and posted on the CTEDDI Sharing Site within 2 weeks.</td>
</tr>
<tr>
<td>November</td>
<td>Before Thanksgiving</td>
</tr>
<tr>
<td></td>
<td>State facilitator visits each school to monitor plan implementation. Establish date for post-testing, for those utilizing this option.</td>
</tr>
<tr>
<td>January through April</td>
<td>Prior to (optional) posttesting</td>
</tr>
<tr>
<td></td>
<td>State facilitator conducts a site visit to each school to review CTEDDI Step 4.</td>
</tr>
<tr>
<td>Spring semester</td>
<td>State facilitator conducts meetings with school team using technology to present CTEDDI Step 5; a combination of e-mail, or phone/web conferencing at least once per month at a minimum.</td>
</tr>
<tr>
<td>May</td>
<td>State facilitator conducts a wrap-up site visit to each school to explain the value of using longitudinal data and continued participation. Review posttest results (if utilized) and interpret for action plan effectiveness and impact for coming year.</td>
</tr>
</tbody>
</table>
How Can I Apply?

State Implementation

• Request an application packet from laferris03@louisville.edu or nocti@nocti.org
• Formal agency letter with application by March 15 for April training
• Site identification and contact information

Jump-Start

• Tech Centers That Work: Jan. 24 (Savannah)

Individual Introductory PD or Customized Option

• Contact laferris03@louisville.edu or nocti@nocti.org
Currently offering technical assistance:

• Math-in-CTE
• Authentic Literacy-in-CTE

Moving soon to technical assistance:

• Science in CTE
• Alternative Licensure Career/Technical Teacher Induction Model
Thank You!