Career and Technical Education in Illinois
Learning
For Life
Learning by Doing

Then, now, what will be...
- Perception and Reality
- Innovations
- Future Considerations

“More about flipping a switch than digging a ditch...”
<table>
<thead>
<tr>
<th>Perceptions</th>
<th>Reality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Those kids....</td>
<td>Our kids...one system</td>
</tr>
<tr>
<td>“Blue collar”</td>
<td>Many uniforms</td>
</tr>
<tr>
<td>Less Rigor</td>
<td>Higher level technical reading and problem solving</td>
</tr>
<tr>
<td>Not College Bound</td>
<td>Requires post-secondary</td>
</tr>
<tr>
<td>Behind the times</td>
<td>Responsive to present and future needs</td>
</tr>
</tbody>
</table>

Learning to Work, Working to Learn

Transforming Career and Technical Education
What does the data tell us about CTE in Illinois?

CTE in Illinois 2009

Total Enrollments: 639,896
CTE Enrollments 329,467
Non-CTE Enrollments 310,429

Educational Requirements for Jobs in 2014
Bachelor's Degree or Higher 26%
Some College / Technical Training 28%
On-the-Job Training 46%

CTE Students Demonstrate the Skills Needed for College and Employment
Choose Employment Only 37%
Choose College Only 23%
Choose College and Employment 40%

Source: ISBE Study of 39,537 CTE Training Level Graduates Class of 2006
Source: ISBE/ISS School Year 2007-2008
### CTE in Illinois 2009 (cont.)

**Increases Overall Grade Point Average**
- 1 Course: .12
- 2 Courses: .20
- 3 Courses: .30

*Overall GPA increases when students take CTE classes*  
*CTE Study*

**Recent Data Shows Career and Technical Education (CTE) Improves Student Performance**

**Increases Graduation Dates**
- 1 Course: 15%
- 2 Courses in the Same Program: 20%
- 3 Courses in the Same Program: 28%

*Graduate rate increases with CTE classes*  
*CTE Study*

### CTE Courses Served in FY08

<table>
<thead>
<tr>
<th>CTE AREA</th>
<th>TOTAL COURSES SERVED</th>
<th># OF COURSES DROPPED IN FY08</th>
<th>TOTAL COURSES ADDED IN FY08</th>
<th>STATUS OF TOTAL COURSES SERVED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>2098</td>
<td>667</td>
<td>743</td>
<td>INCREASED</td>
</tr>
<tr>
<td>Business</td>
<td>5297</td>
<td>2083</td>
<td>1854</td>
<td>DECREASED</td>
</tr>
<tr>
<td>FCS</td>
<td>4224</td>
<td>1147</td>
<td>1218</td>
<td>INCREASED</td>
</tr>
<tr>
<td>Health</td>
<td>427</td>
<td>97</td>
<td>112</td>
<td>INCREASED</td>
</tr>
<tr>
<td>Industrial</td>
<td>4992</td>
<td>1453</td>
<td>1572</td>
<td>INCREASED</td>
</tr>
</tbody>
</table>

**TOTALLY, 52 CTE COURSES WERE ADDED IN FY08**
How, why, and what data we’ve collected

- Design principle:
  - Compliance
  - Instructional Improvement
- Illinois CTE and our Illinois Student Information System was a national leader for many years
- Data collection priority for a generation
- Agricultural Education collecting additional data for years, leveraging incentive funding for better data
The New World of Work
What are Clusters?

- An organizer to structure career pathways and career-themed programs of study
- A basis for career-themed standards (knowledge and skill statements) for curriculum, instruction & assessment
- A basis for organization of career development and guidance information
- A strategy to engage the workforce and economic communities in the education enterprise

16 Career Clusters

- Agriculture, Food & Natural Resources
- Education & Training
- Hospitality & Tourism
- Manufacturing
- Architecture & Construction
- Finance
- Human Services
- Marketing
- Arts, A/V Technology & Communications
- Government & Public Administration
- Information Technology
- Science, Technology, Engineering & Mathematics
- Business, Management & Administration
- Health Science
- Public Safety, Corrections & Security
- Transportation, Distribution & Logistics
- Career Clusters are groupings of occupations and industries.
- Career pathways represent a grouping of occupations within a cluster based on commonalities of knowledge and skills.

Should CTE fund Programs of Study that are high skill, high wage, and/or high demand?
Perkins Act of 2006
Programs of Study

- Secondary and postsecondary elements
- Coherent sequence - academic and technical
- Opportunity for dual or concurrent enrollment
- Leads to an industry-recognized credential
How we tend to teach

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>10 = X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

How we want to learn

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
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</tr>
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<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>10 = X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The difference?

| 1 = \( \square \) | 6 = \( \Box \) |
| 2 = \( \Box \) | 7 = \( \square \) |
| 3 = \( \square \) | 8 = \( \Box \) |
| 4 = \( \Box \) | 9 = \( \square \) |
| 5 = \( \Box \) | 10 = \( X \) |
What is role of CTE and 21st Century Partnership with the American Diploma Project?

Rigor/Relevance Framework™

Quadrant C - Assimilation
Students acquire and refine their acquired knowledge to be able to use that knowledge automatically and routinely to analyze and solve problems and create solutions.

Quadrant D - Adaptation
Students have the competence to think in complex ways and to apply their knowledge and skills. Even when confronted with perplexing unknowns, students are able to use extensive knowledge and skill to create solutions and take action that further develops their skills and knowledge.

Quadrant A - Acquisition
Students gather and store bits of knowledge and information. Students are primarily expected to remember or understand this knowledge.

Quadrant B - Application
Students use acquired knowledge to solve problems, design solutions, and complete work. The highest level of application is to apply knowledge to new and unpredictable situations.

Application Model

1. Knowledge in one discipline
2. Apply in discipline
3. Apply across disciplines
4. Apply to real-world predictable situations
5. Apply to real-world unpredictable situations
Demand for Middle-Skill Jobs is Strong, Will Remain Strong in Illinois

FIGURE 1. Illinois Jobs by Skill Level, 2006

<table>
<thead>
<tr>
<th>Skill Level</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>29%</td>
</tr>
<tr>
<td>Middle</td>
<td>53%</td>
</tr>
<tr>
<td>Low</td>
<td>18%</td>
</tr>
</tbody>
</table>

Source: Calculated by TWA from the Bureau of Labor Statistics website
### Job Skill Changes

*Employment Needs per Skill Level*


Don Smoot, Three Rivers Education for Employment System

<table>
<thead>
<tr>
<th></th>
<th>1950</th>
<th>1991</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unskilled</td>
<td>60%</td>
<td>35%</td>
<td>14%</td>
</tr>
<tr>
<td>Skilled</td>
<td>20%</td>
<td>45%</td>
<td>62%</td>
</tr>
<tr>
<td>Professional</td>
<td>20%</td>
<td>20%</td>
<td>24%</td>
</tr>
</tbody>
</table>

45% of the country's job openings (between 2004 and 2014) will be middle-skill occupations. In comparison:
- 33% require high skills
- 22% are low-skill service-sector jobs.

Substantial demand remains for individuals to fill skilled jobs in the middle of the labor market, with many of these job paying quite high wages.
On average, workers with associate degrees earn less than those with bachelor’s degrees, but 83 percent of workers with associate degrees earn the same as workers with bachelor’s degrees.

Carnevale and Desrochers, Standards for What?, 2003

Enhancing rigor include 21st Century Skills
The “Soft” Skills aren’t so soft…

Mathematica study suggests:
- that improvements in non-academic competencies such as work habits and
- a belief that success results from hard work rather than luck may be just as important for improving later earnings and postsecondary success for some students as gains in academic skills.

Source: Education Week, 6/12/07

The primary aim of education is not to enable students to do well in school, but to help them do well in the lives they lead outside of school.
We’ve created false proxies for learning...

- Finishing a course or textbook has come to mean *achievement*
- Listening to lecture has come to mean *understanding*
- Getting a high score on a standardized test has come to mean *proficiency*

Learning should have its roots in...

- *Meaning*, not just memory
- *Engagement*, not simply transmission
- *Inquiry*, not only compliance
- *Exploration*, not just acquisition
- *Personalization*, not simply uniformity
- *Collaboration*, not only competition
- Trust, not fear
Is career education an expectation for all students? Should every student have a plan?

Transition through high school and to college

31% Leave with 0 Credits

Source: Education Week March 2005
Basic Knowledge/Skills

- English Language (spoken)
- Reading Comprehension (in English)
- Writing in English (grammar, spelling, etc.)
- Mathematics
- Science
- Government/Economics
- Humanities/Arts
- Foreign Languages
- History/Geography

Applied Skills

• Critical Thinking/Problem Solving
• Oral Communication
• Written Communication
• Teamwork/Collaboration
• Diversity
• Information Technology Application
• Leadership
• Creativity/Innovation
• Lifelong Learning/Self Direction
• Professionalism/Work Ethic
• Ethics/Social Responsibility

Are They Really Ready To Work?
How can WorkKeys become a vital component of meaningful assessment of high school students?
GOLD
Is awarded in Illinois to
Joseph P. Sample
In recognition of verified skills in Applied Mathematics, Locating Information, and Reading for Information
Governor Pat Quinn

The WorkKeys® system permits direct comparison of the level of skills needed to perform a job with the level of skills an individual actually demonstrates. The WorkKeys® powered Career Readiness Certificate shows that an individual has achieved a level of performance across a range of skills which, in combination, could lead the person's readiness to enter a particular occupation. It is a valuable credential that can be utilized as a competitive advantage in the job market. The certificate is also a valuable tool for the employer because it provides an indication of a job candidate's potential productivity and can be used to determine the initial training needs of new hires. The certificate may also be used to document and communicate the occupational profile database. The individual retained on the back of this certificate has demonstrated the following performances:

Applied Mathematics

Solve straightforward, basic problems requiring math operations, decimal arithmetic, that require interpolation of fractions, decimals, and percent to make sense, and manipulate simple money and item costs or provide service or information.

Put information in the right order to solve problems requiring area or volume math operations, and use averages, ratios, proportions, rates, and factions to determine directions and report information.

Perform or use steps of logic and calculations divide how to solve, list problems, look up and use the correct formula, identify a how black, calculate percent discounts and markup, and solve two-dimensional geometric problems to identify and analyze student data.

Locating Information

Read a skill is based information in a simple box, graph, table, or chart in the workplace, work-related issues, and problems.

Find several pieces of information in straightforward charts, tables, and graphs, information, and identify trends in order to comprehend and analyze work-related issues and problems.

Scan through documents for relevant and complete trends, in order to analyze and interpret work situations.

Reading for Information

Read and understand concise work-related documents such as memos and announcements, in order to follow instructions and apply basic rules and information in workplace situations.

Read and understand work-related documents, such as policies, procedures, and rules, in order to follow instructions and apply important rules and information in workplace situations.

Read and understand work-related documents, such as technical manuals, in order to use the correct computer instruction issues and questions, and to apply complex instructions to new workplace situations.

This credential is registered with ACT in the National Career Readiness database and may be verified at www.MyWorkKey.com.

If you have questions, call 1-800-WORKKEY.
- Unique funding for Agricultural Education has grown
- The resources are used well
- Programs all collect good data

**Agricultural Education**
Combining Forces for Ongoing Leadership

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**Who are the Education for Employment entities?**

- How are they funded?
- Roles and Responsibilities?
- How to help support quality at local level?
Education for Employment Systems

- Administration
- Leadership
- Innovation

What innovations has CTE undertaken in the last 10 years in Illinois?
Innovations, to name a few......
- *Project Lead the Way* and Science Technology, Engineering and Math (STEM)
- *Innovation Talent Pilot*
  - Problem Based Learning, Career Development, Real World Problems
- Web-based CTE Program Approval
- *Programs of Study* with Illinois Community College Board, Department of Commerce and Economic Opportunity, and industry
- Illinois Office of Specialized Professional Services, *The New Look*
- *Math in CTE Project*
- *High Schools That Work*
- *Growing Agricultural Science Teachers Curriculum Revitalization Project*

What are the challenges and opportunities for Career and Technical Education in Illinois?
Future Considerations

- WorkKeys and CRC
- Career Planning for All Students
  - Career Concentration as Graduation Requirement
  - Staffing for Counseling
- Program Improvement Strategy and Performance Based Funding
- Teacher Supply and Retention
  - Growing Agricultural Science Teachers
  - Elite Conference
  - Provisional and Alternative Certification
- Increased Investment and Return on Investment

NASBE’s Taskforce

- Provide meaningful opportunities for all students to engage in rigorous and relevant career and technical education, both at the high school level and in the middle grades
- Engage industry and community leaders in meaningful partnerships
- Adopt policies to integrate CTE and academic coursework and standards, while providing multiple assessments to measure skill and knowledge attainment
NASBE’s Taskforce

› Ensure seamless transitions for students from high school to postsecondary and beyond

› Develop policies to address quality, recruitment, and compensation for CTE instructors

› Address the poor image of CTE with educators, parents, guidance counselors, and the public
It is my goal in life to blend my avocation and my vocation as my two eyes work as one.
- Robert Frost