Beyond Business as Usual: Key Actions to Boost College and Career Readiness

David T. Conley, PhD
Professor, University of Oregon
CEO, Educational Policy Improvement Center (EPIC)
May 10, 2011 • Adult Education State Directors Meeting
Much of the Information Contained in This Presentation Comes From:

To download a copy of the presentation:
www.epiconline.org

or email
info@epiconline.org
Need for a More Complete Definition of “Ready”

- The new goal of high school should be to equip as many students as possible for college and career success, in other words, to be able to continue to learn beyond high school.
- Today’s high school diploma certifies college eligibility via specified courses taken and grades received.
- College eligibility is not the same as college readiness.
  - College and career readiness is more complex and multi-dimensional than meeting eligibility standards.
- The definition of “ready” is a student who can succeed—without remediation—in credit-bearing general education courses or a two-year associates or certificate program that leads to a career in the O-NET job zone 3 classification.
The Four Dimensions of College and Career Readiness

Key Cognitive Strategies
- Problem formulation, research, interpretation, communication, precision and accuracy

Key Content Knowledge
- Key foundational content and “big ideas” from core subjects

Academic Behaviors (Key Learning Strategies)
- Self-management skills: time management, study skills, goal setting, self-awareness, persistence, effort-based attribution

Contextual Skills and Awareness (College and Career Knowledge)
- Admissions requirements, financial aid, college types and missions, college culture, support resources, relations with instructors
Tracking Readiness in Multiple Areas For An Individual Student

This profile describes a student whose content knowledge is strong, but for whom some concerns remain: cognitive strategies are not developing, college knowledge is below optimal and academic behaviors are somewhat erratic. This profile could be used to diagnose and prescribe in high school or to link the student with support services in college.
What is a cognitive strategy?

- Systematic approach to achieve key learning goals that takes into account the rules and methods of the academic discipline that are necessary to achieving the goal.

- Elaborate plan of action that chooses among alternative approaches and anticipates potential problems that must be addressed to solve a problem or complete a complex task.
Adults’ Use of Key Cognitive Strategies

• Have you ever purchased anything at Ikea?

• Was “some assembly required”?

• Consider the strategies you typically use to assemble such merchandise and their effectiveness.
The Key Cognitive Strategies

- Hypothesize
- Strategize

- Identify
- Collect

- Organize
- Construct

- Monitor
- Confirm

- Analyze
- Evaluate

Problem Formulation → Precision/Accuracy → Research → Interpretation → Communication
How Novices and Experts Solve Problems

Novices:
- are slower and more deliberate
- know individual facts about topics
- learn about pieces of systems
- memorize bits of information and encode the bits superficially
- tend to focus on discrete knowledge in isolation of the structure of a discipline
- reason in specific contexts by using recently-acquired information
- recall information by rote

Experts:
- are faster and more accurate
- organize facts into “chunks” for better recall and application
- integrate pieces of knowledge into systems frameworks
- connect new knowledge to existing knowledge
- learn through example and analogy
- use analytical skills to apply knowledge and select procedures
- generalize knowledge to new settings and circumstances
- create mental cues to facilitate recall
### Novice-Expert Continuum for Developing Key Cognitive Strategies

<table>
<thead>
<tr>
<th></th>
<th>Benchmark I</th>
<th>Benchmark II</th>
<th>Benchmark III</th>
<th>Benchmark College Ready</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emerging Expert 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accomplished</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strategic Thinker 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accomplished</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emerging</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emerging Novice 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Novice 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emerging Novice 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**College/Career-ready Trajectory**
What Is Key Content Knowledge?

Components:
- Key terms and terminology
- Factual information
- Linking ideas
- Organizing concepts

The human brain retains this information to the degree to which it can:
- create connections or links among the pieces to create a “schema” or “scaffold” structure
- associate emotions, positive or negative, with the knowledge
- find the knowledge meaningful, relevant, or useful
- apply or use the knowledge in a variety of authentic situations
- receive timely feedback on how effectively it uses the knowledge.
Key Requirements for ABE Success

• Students in adult basic education need competency in all four of the Dimensions of College and Career Readiness, not just reading and math.
• The most important single skill ABE students can gain is learning how to learn.
• Success in ABE should include more indicators than a reading and math score.
  • All students will need cognitive and learning strategies, a knowledge of how formal learning environments operate, and how to get help in those environments.
College Readiness, Career Readiness: Same or Different?

• College readiness and career readiness have become important policy goals for education over the past few years.
  ▪ Common Core State Standards point toward college and career readiness.
  ▪ Obama administration plans to change name of NCLB to “College and Career Ready Act.”

• However, many people contend that it is unclear what is meant by these terms.

• What do they mean? How much agreement is there on what they mean? Are they the same or different, or how are they the same or different? How can they be measured?
Different Types of Readiness

- **Work ready** = Meets basic expectations regarding workplace behavior and demeanor
- **Job ready** = Possesses specific knowledge necessary to begin an entry-level position
- **Career ready** = Possesses sufficient foundational knowledge and skill and general learning strategies necessary to begin studies in a career pathway
- **College ready** = Is prepared in the four dimensions of college readiness necessary to succeed in entry-level general education courses
Example Pathways for College and Careers

• Increasingly, the academic skills required to pursue technical training are converging with those necessary to pursue postsecondary study.
• Several examples follow that illustrate this convergence and the difficulty of separating career readiness for a form of readiness for postsecondary education more generally.
• Examples are from O*NET Zone 3 job descriptions or community college certificate program learning outcomes.
Construction Supervisors

Example Tasks:
- Analyze worker or production problems and recommend solutions.
- Train workers in construction methods, safety procedures, or company policies.
- Read specifications, such as blueprints, to determine requirements or to plan.
- Estimate material or worker requirements to complete jobs.

Necessary Skills:
- Critical thinking
- Judgment and decision making
- Management of personnel resources
- Speaking and listening
- Complex problem solving
- Reading comprehension

Degree and Certificate Pathways:
- Bachelor of Science—Construction Management
- Associate of Arts—Civil Engineering
Lodging Managers

Example Tasks:
- Monitor the revenue activity of the hotel or facility.
- Answer inquiries and resolve occupants' complaints.
- Participate in financial activities such as the setting of room rates.
- Train staff members.

Necessary Skills:
- Speaking and listening
- Reading comprehension
- Critical thinking
- Judgment and decision making
- Complex problem solving

Degree and Certificate Pathways:
- Bachelor of Science—Hospitality Management
- Associate of Applied Science—Hospitality Operations
Environmental Engineering Technicians

Example Tasks:
- Conduct pollution surveys, collect and analyze samples.
- Perform statistical analysis and correction of air or water pollution data.
- Review technical documents to ensure completeness and conformance.
- Provide technical engineering support in the planning of projects.

Necessary Skills:
- Critical thinking
- Reading comprehension
- Judgment and decision making
- Complex problem solving
- Quality control analysis

Degree and Certificate Pathways:
- Associate of Science—Environmental Engineering Technology
- Certificate of Geotechnical Engineering Technology
Welding Technology Certificate

- Select the correct electrode classification and parameters for various thickness of material and welding positions on ferrous and nonferrous metals.
- Define principles of gas metal arc welding.
- Interpret GMA electrode and classification and specification.
- Select correct electrode amperage settings for the job application.
- Interpret graphic welding symbols.

- Describe shielded metal arc welding operations of various positions using selected electrodes on different joint designs.
- Explain the reason for the formation of each discontinuity type and distinguish different discontinuities.
- Interpret fabrication blueprints using a systematic process.
- Relate the requirements for welding ferrous and nonferrous metals.
## Studies of Texas College and Career Readiness Standards

<table>
<thead>
<tr>
<th>Study</th>
<th>Description of Study</th>
<th>% Cross-disciplinary Standards Aligned</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCCRI Phase II</td>
<td>Level of alignment between 20 entry-level general education courses and the CCRS</td>
<td>100%</td>
</tr>
<tr>
<td>CTE Phase I</td>
<td>Level of alignment between 9 entry-level CTE course and cross-disciplinary standards only</td>
<td>100%</td>
</tr>
<tr>
<td>CTE Pathways</td>
<td>Level of alignment between CTE nursing and computer programming course pathways and the CCRS</td>
<td>100%</td>
</tr>
</tbody>
</table>
TCCRI: Conclusions

- The Texas studies confirmed that every cross-disciplinary skill is highly aligned with at least one CTE course studied.
  - Most skills aligned with multiple CTE courses.
- The analysis of nine CTE course areas and two career pathways demonstrates the range and variation of specific knowledge and skills necessary for success in any particular CTE program or career pathway.
Measurement Implications

- Current college eligibility measures are well known but exceedingly narrow in scope.
- Few general career readiness measures exist.
- College readiness and career readiness are each far more complex than current instruments can gauge.
- An openness to a wider range of indicators and data is necessary to understand college and career readiness in more depth, accuracy, and specificity.
- In particular, new placement methods are needed that are more sensitive to the actual requirements of specific career pathways.
Seven Key Principles of College Readiness

- **Principle 1:** Create and maintain a college-going culture in the school.
- **Principle 2:** Create a core academic program that is aligned with and leads to college readiness by the end of 12th grade.
- **Principle 3:** Teach key self-management skills and expect students to use them.
- **Principle 4:** Make college real by preparing students for the complexity of applying to college and making the transition successfully.
- **Principle 5:** Create assignments and grading policies in high school that more closely approximate college expectations.
- **Principle 6:** Make the senior year meaningful and challenging.
- **Principle 7:** Build partnerships with and connections to postsecondary programs and institutions.
Conclusion

- Definitions of college ready and career ready are beginning to overlap.
- While college readiness and career readiness are not exactly the same, commonalities are becoming more important than differences.
- The Common Core State Standards and the common assessments will provide greater focus and also raise the bar significantly.
- The GED may also become more cognitively challenging.
Some Example Recommendations

• **Key Content Knowledge:**
  • Get better placement methods that result in profiles linked to certificate program requirements.
  • Increase dual enrollment, bridge programs, hybrid learning.

• **Key Cognitive Strategies:**
  • Have at least one assignment or project that requires research and interpretation.
  • Consider “learning strategy seminars” where students are exposed to assignments that develop cognitive and learning strategies.

• **Academic Behaviors:**
  • Explicitly teach students to manage their time, study alone and in groups, set goals, persist with difficult tasks, believe effort trumps aptitude.

• **College Knowledge:**
  • Explicitly train students how to access resource and support systems available to them in college and how to interact with college instructors.
The CollegeCareerReady™ System

Diagnose
- Diagnostics
- Student Performance Assessment
- Student Profiles

Align
- Course Design
- Course Alignment
- Course Pathways

Partner
- Reference Documents
- Paired Courses
- Secondary-Postsecondary Connections

CollegeCareerReady™
For More Information

Visit
www.epiconline.org
or email
info@epiconline.org

Educational Policy Improvement Center
720 East 13th Street, Suite 202
Eugene, OR 97401