The Common Career Technical Core, Programs of Study & Industry-Based Standards

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Speakers

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The Common Career Technical Core

– Are benchmark standards

– Define what a student should know and be able to do at the end of a program of study.
Developed by states for states
Key Term: End of Program of Study

• The CCTC standards are written to address the educational expectations across an entire *program of study*.

• High-quality programs of study encompass learning at both the secondary and postsecondary level.
Key Term: Benchmark Standard

- A benchmark standard serves as a common reference point against which other standards, curriculum and programs of study can be compared.

- As benchmark standards, in practice, the CCTC can serve as an anchor for the patchwork of state, industry and local standards currently in use across the country.
Components of CCTC

**Standards for Career Ready Practice**

- 12 practices with suggested indicators
- Positioned to be applied across the entire continuum of instruction
- Modeled after Common Core’s Standards for Mathematical Practice

**Cluster- and Pathway-Level Content Standards**

- Expectations within Career Cluster and Career Pathways that frame a Program of Study
- Based on Validated Knowledge and Skills Statements
- Used to align expectations across states
Career Ready Practices

1. Act as a responsible and contributing citizen and employee
2. Apply appropriate academic and technical skills
3. Attend to personal health and financial well-being
4. Communicate clearly and effectively and with reason
5. Consider the environmental, social and economic impacts of decisions
6. Demonstrate creativity and innovation
7. Employ valid and reliable research strategies
8. Utilize critical thinking to make sense of problems and persevere in solving them
9. Model integrity, ethical leadership and effective management
10. Plan education and career paths aligned to personal goals
11. Use technology to enhance productivity
12. Work productively in teams, using cultural global competence
16 Career Clusters®

- Agriculture, Food & Natural Resources
- Architecture & Construction
- Arts, A/V Technology & Communications
- Business Management & Administration
- Education & Training
- Finance
- Government & Public Administration
- Health Science
- Hospitality & Tourism
- Human Services
- Information Technology
- Law, Public Safety, Corrections & Security
- Manufacturing
- Marketing
- Science, Technology, Engineering & Mathematics
- Transportation, Distribution & Logistics
The Common Career Technical Core & Existing Standards
The State of Career Technical Education
An Analysis of State CTE Standards
CCTC Alignment Study

- First-ever analysis of state-approved standards for secondary and postsecondary CTE
- Compare state-approved standards to CCTC
- Look at state policies and practices
- Individual state reports and national report
Most states have course-level standards that are largely occupationally or job-specific.

Lack of alignment reflects largely reflects different levels of standards.
Common Question

What about industry-based standards?

The Common Career Technical Core, Programs of Study & Industry Standards

INTRODUCTION

As the economy has changed in the past decade, many Career Technical Education (CTE) programs have transitioned from helping students prepare for an entry-level job to helping students prepare for a career. This has been accelerated by the development and implementation of programs of study – or coordinated, non-duplicative sequences of academic and technical courses from secondary to postsecondary where students can participate in dual enrollment courses, earn industry-based credentials and/or acquire postsecondary degrees. All local recipients of Carl D. Perkins Career and Technical Education Act (Perkins) funds must have at least one program of study in place and many states have embraced the program of study as the new baseline for CTE programs.

Core to the program of study design is the sequence of courses, which begin with broader, career exploration and industry-specific skills and, over time, progress to narrower, more occupationally-focused skills, and offer multiple entry and exit points for learners at different levels in their education and training. In part this shift is reflective of employers’ increased call for individuals with the broad-based “21st century” or transferable “employability” skills, as well as the recognition that CTE shouldn’t be about putting students on limited job track when they are still in high school but rather about providing them with a range of career options.

Another critical element of a program of study’s design is its alignment to rigorous college and career readiness standards. While this seems straightforward, it can actually be quite confusing in practice. Over the years, national organizations, individual state or district education agencies, and industry-based organizations all have created standards to define what students must know and be able to do as a function of participating in various CTE programs. As a result, the CTE community is faced with almost an
Industry-Based Standards

1. National Council for Agriculture Education (Agriculture, Food & Natural Resources)
2. National Center for Construction Education and Research (NCCER) (Architecture & Construction and Manufacturing (Welding only))
3. Home Builders Institute (HBI) (Architecture & Construction)
6. The Graphic Arts Education & Research Foundation (GAERF) PrintED (Arts, A/V Technology & Communications)
7. Adobe (Arts, A/V Technology & Communications)
8. National Association for the Education of Young Children (NAEYC) (Education & Training and Human Services)
9. American Medical Technologists (Health Science)
10. National Consortium for Health Science Education (NCHSE) (Health Science)
12. National Restaurant Association Education Foundation (NRAEF) (Hospitality & Tourism)
13. American Culinary Federation Education Foundation (Hospitality & Tourism)
14. CompTIA (Information Technology)
15. Manufacturing Skill Standards Council (MSSC) (Manufacturing)
16. Marketing & Business Administration Research and Curriculum Center (Business Management & Administration and Marketing)
17. National Retail Federation (NRF) (Marketing and Hospitality & Tourism)
18. National Automotive Technician’s Education Foundation (NATEF) (Transportation, Distribution & Logistics)
Sampling of Standards

- Selected these 18 industry-based standards to serve as a sample of the broader field of industry-based standards based on:
  - The estimated degree of their use in states and schools,
  - Their availability (either on their website or made available upon request), and
  - Distribution across the 16 Career Clusters (to the extent possible).
- Started with Maine’s state-approved standards and augmented
Caveats

• Standards are not exhaustive, but representative

• A number of the industry associations included have additional standards documents that were not used due to time and budget constraints.

• Analysis is limited to the standards we did review and should not be taken as a blanket statement for all standards created by an individual organization.
Goal of Report

“The intent of this analysis is not to judge any industry-based standards…rather the intent is provide actionable information to state and local CTE leaders as think through how they use industry-based standards within the context of a program of study.”
Methodology
Methodology Overview

1. Standards “extracted”

2. Algorithm to drive computer-automated “alignment”

3. Human-driven quality assurance process
Methodology Assumptions

- Method needs to produce reliable information to make valid judgments regarding agreement between a state/industry-based standard and a CCTC standard
- Method needs to be “replicable”
- Method needs to be applicable across multiple standard definitions and/or formats (both within and across states/industries)
Alignment Judgments

- Algorithm matching
- Human reviewers/raters
- Calibration

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<th></th>
<th>Verb</th>
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<tr>
<td>Aligned</td>
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<td>✓</td>
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<tr>
<td>Partially Aligned</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Not Aligned</td>
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What does it mean to be aligned?

A CCTC standard was judged as “aligned” if a particular industry standard or a group industry standards addressed a CCTC standard with a breadth and depth equal to or greater than the CCTC standard.
What does it mean to be partially aligned?

If the industry-based standards included an individual or multiple relevant statements that did not completely address the breadth and depth of the CCTC standard, a judgment of “Partially Aligned” was applied.
Note on “alignment”

Common for *multiple* existing state/industry-based standards to “roll up” to partially or fully align to a CCTC standard.
Additional FAQs

My organization has crosswalked our standards to the CCTC but the results are different, why is this?

• “Crosswalking” and alignment are conceptually distinct activities.

• Crosswalking involves determining what standards cover the content in the CCTC and is therefore often focused on content or the topic area.

• Alignment studies take a closer look at the language and expectations of the standards.

• For example, examine these two standards:
  – CCTC: Develop a business plan in AFNR.
  – Industry: Understand the elements of a business plan.
Additional FAQs

Why were only some parts of my organization’s standards used in the alignment study?

Once the standards were identified, the research team determined the key elements of the industry-based standards appropriate for alignment to the CCTC. This is termed “extraction” because the relevant standards needed to be extracted from the source document into a database. The level of extraction required an initial analysis of the industry-based standards structure. Some standards have multiple levels, for example:

- **Competency**
  - **Descriptors**
    - **[Optional Descriptors]**

In most cases the highest level of the standard, **Competency** in the example above, would be selected for alignment to the CCTC because these broad competencies were most likely to align to the CCTC statements. In all cases, **Optional Descriptors**, or other **suggested or elective** standards, benchmarks, or competencies were **not** used for the analysis.
What We Found:
The CCTC, Programs of Study & Industry-Based Standards
Findings

• The industry-based standards, on average, were not particularly well aligned with the CCTC.

• *Largely as expected based on scope/design of CCTC and industry-based standards*
Findings

• Many did align well with specific Career Pathways but did not address the cross-cutting Career Ready Practices and Career Clusters.

• Industry-based standards developed by consortia are more likely to address both Career Cluster and Career Pathway-level standards.
# Career Ready Practices

<table>
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<tr>
<th>Career Ready Practices (N = 18)</th>
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<td>Act as a responsible and contributing citizen and employee</td>
<td>5%</td>
<td>33%</td>
<td>61%</td>
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<tr>
<td>Apply appropriate academic and technical skills</td>
<td>17%</td>
<td>39%</td>
<td>44%</td>
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<tr>
<td>Attend to personal health and financial well-being</td>
<td>0%</td>
<td>22%</td>
<td>79%</td>
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<tr>
<td>Communicate clearly, effectively and with reason</td>
<td>39%</td>
<td>28%</td>
<td>33%</td>
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<td>Consider the environmental, social and economic impacts of decisions</td>
<td>0%</td>
<td>44%</td>
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<td>Demonstrate creativity and innovation</td>
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<td>0%</td>
<td>100%</td>
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<tr>
<td>Employ valid and reliable research strategies</td>
<td>0%</td>
<td>22%</td>
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<tr>
<td>Utilize critical thinking to make sense of problems and persevere in solving them.</td>
<td>11%</td>
<td>50%</td>
<td>39%</td>
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<td>11%</td>
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<td>50%</td>
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Implications for the Field

• Industry standards play an important role in preparing students for careers BUT they cannot alone make up a program of study

• Stakeholders/state leaders should:
  – Attend to “Career Cluster standards gap”
  – Attend to Career Ready Practices
  – Provide guidance on how standards fit together
Consider…

Expectations within a Program of Study

Career Exploration
- Industry-specific Knowledge & Skills
- Career-specific Knowledge & Skills
- Occupation-specific Knowledge & Skills

Career Ready Practices
- Career Cluster Standards
- Career Pathway Standards
- Industry-Developed Standards
Consider...

<table>
<thead>
<tr>
<th>COURSE 1</th>
<th>COURSE 2</th>
<th>COURSE 3</th>
<th>COURSE 4</th>
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<tr>
<td>Career/Industry Exploration Course (Industry, Cluster Specific)</td>
<td>Intro-Level Course (Industry, Pathway Specific)</td>
<td>Specialized Course (Pathway, Career Specific)</td>
<td>Capstone Course (Career, Occupation Specific)</td>
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<tr>
<td>Medical Terminology</td>
<td>Diagnostic Medicine</td>
<td>Anatomy &amp; Physiology</td>
<td>Intro to Physical Therapy</td>
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<td>Principles of Manufacturing</td>
<td>Quality Assurance Concepts &amp; Techniques</td>
<td>Welding I</td>
<td>Welding II</td>
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Questions?


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