Industry Certification

Implementation Recommendations, Resources, and Tools

Graduation Guidelines Industry Certification Workgroup

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INTRODUCTION

Industry Certification in Graduation Guidelines

The state of Colorado's Graduation Guidelines afford schools and districts the **option** to use industry certification to make student postsecondary and workforce readiness determinations for English and math. To assist district and school practitioners that choose to include industry certifications in their local graduation guidelines, the Colorado Department of Education convened a statewide working group, charged with developing recommendations, resources, and tools for the implementation of industry certifications in graduation guidelines.

This guide is designed for Colorado's educators to inform the design, implementation, evaluation, and continuous improvement of their district and/or school use of industry certifications to demonstrate postsecondary and workforce readiness.

What is an Industry Certification?

An industry recognized third-party or governing board administered assessment, examination or licensure that measures occupational competency and validates a knowledge base and skills that demonstrate mastery in a particular industry. Some examples include:
- Completing an industry certification program and then passing the industry recognized certification exam/license
- Passing an examination that enables the award of an industry certification
- Obtaining a state-issued professional license

(See Appendix for specific examples)

Benefits of Industry Certifications

Industry certifications are a way for students to show they have specific, industry-needed skills and abilities, which increases their opportunities beyond high school.
- *For the student* - Industry certifications are a mechanism that allows students to demonstrate mastery of knowledge and/or skills. They can increase job prospects, marketability to employers, and employability, as well as options for post-secondary education.

- *For districts* - Certifications provide additional options for students by offering districts the opportunity to tailor graduation requirements to the unique needs of students and the local community, and promote increased student engagement. Also, districts may be able to take advantage of an incentive program for student credential completion. Please find information in the Appendix and/or link to the Career Development Success Program: https://www.cde.state.co.us/postsecondary/hb16-1289

- *For employers/industry* - Industry certifications demonstrate evidence of workers' competencies, thus supporting hiring practices and filling specific employer-demanded knowledge, skills and abilities.

- *For Colorado/local community* – Industry certifications connect skill sets of the workforce to workforce demand. This intentional connection addresses the skills gap while increasing an individual's earning potential.

Considerations & Challenges
- Changing landscape of CTE, career pathways, industry partnerships
- Alignment with standards

DEFINITIONS AND ABBREVIATIONS

The table below includes frequently used terms and abbreviations used in this document. See other definitions and terms from TalentFOUND. https://www.colorado.gov/pacific/sites/default/files/17-1031_TalentFOUND_Terms.pdf

| Term	Definition
Career Clusters	A framework for studying traditional academics and learning the skills specific to a career, and provide schools with a structure for organizing or restructuring curriculum offerings and focusing class make-up by a common career pathway
Career Pathway	A series of connected education and training programs, work experiences, and student support services that enable individuals to secure a job or advance in a demand industry or occupation. http://www.dol.gov/NationalDialogue/ColoradoCareerPathwaysGuide.pdf
Concurrent Enrollment	The simultaneous enrollment of a qualified student in a local education provider and in one or more postsecondary courses, including academic or career and technical education courses, at an institution of higher education.
CTE (Career & Technical Education)	Organized educational programs offering sequences of courses directly related to preparing individuals for paid or unpaid employment in current or emerging occupations requiring other than a baccalaureate or advanced degree. (Carl D. Perkins Vocational and Technical Education Act, Public Law 105-332)
Community/Technical College Certificate*	A higher education recognized certificate that is awarded for completing the coursework outlined in an approved academic program.
Industry Recognized Certification*	An industry recognized third-party or governing board administered assessment, examination or licensure that measures occupational competency and validates a knowledge base and skills that shows mastery in a particular industry
PWR	**P**ostsecondary and **W**orkforce **R**eadiness. *"Colorado high school graduates demonstrate the knowledge and skills (competencies) needed to succeed in postsecondary settings and to advance in career pathways as lifelong learners and contributing citizens."* Adopted by the Colorado State Board of Education and the Colorado Commission on Higher Education, 2016. See also, **Essential Skills**: https://www.cde.state.co.us/communications/pwrfactsheet
Sector Partnerships	Industry specific regional partnerships, led by business in partnership with economic development, education, and workforce development.
Stackable Credentials	A credential that is part of a sequence of credentials that can be accumulated over time to build up an individual's qualifications and help them to move along a career pathway or up a career ladder to different and potentially higher-paying jobs. http://www.clasp.org/resources-and-publications/files/2014-03-21-Stackable-Credentials-Paper-FINAL.pdf
Plans of Study	A progression of coursework that leads to an industry recognized certificate/certification.
SOC Code	Standard Occupational Classification system is used by Federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating, or disseminating data

*Note: A community/technical college certificate signifies completion of a series of courses and is not the same as an industry recognized certification. Completion of a community/technical college series of courses can prepare a student to take the assessment to earn an industry recognized certification.

IMPLEMENTATION

The unique needs and resources of each district will dictate the implementation of industry certifications as an approved component of a district's graduation requirements. The following are suggested steps that districts may consider for implementation.

Assess the Need → Design Implementation Plan → Launch
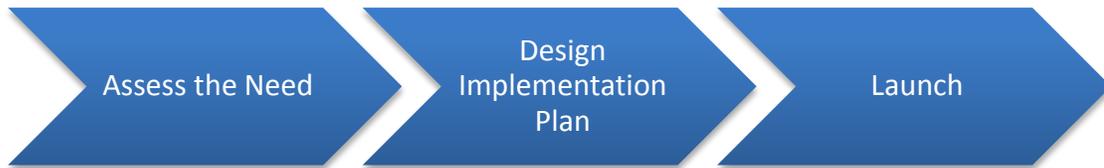
Phase 1: Assess the Need

Perform an internal analysis to determine if certifications are currently being utilized. If certifications are not being utilized, perform a high-level assessment of the district or school's need and capacity to implement certifications as a component of the district's graduation requirement. Addressing these questions will encourage and require collaboration and coordination among administration, faculty and staff, as well as post-secondary and industry partners

Some questions for consideration may include:
- Is there a desire by key stakeholders to add Industry Certifications to the district's menu of Graduation Guidelines?
- Are there certifications currently being offered in CTE or non-CTE programs? (see CTE section for details)
- Is there curriculum in place that could lead to industry certification?
- Is there a strong alignment with local workforce needs?
- Do partnerships with industry and/or post-secondary institutions already exist? (see industry outreach section for a detailed checklist)
- Is there a mechanism for communicating the need for industry certifications to our local constituents (students, teachers, parents, community members)?
- Is there an existing committee or entity that can lead the implementation (e.g. shared decision making team, curriculum committee, etc.)?
- Does the existing staff have expertise is this area and what professional development might be necessary?
- Will identifiable certifications be district initiated, school initiated or student initiated?

Outcome: Go, No Go Decision. If it is determined that there is a need and the approval from district leadership is received, the next phase is to design an Implementation Plan.

Phase 2: Design an Implementation Plan

- Create a diverse oversight committee.

- Create a committee of individuals who can lead the work. Members may include administration, faculty and staff, Career and Technical educators, post-secondary partners, industry partners, and students. By involving the community, schools will be able to provide avenues to new resources and opportunities for students and teachers. Establish a process framework.

- Develop a framework that will support management and accountability as well as a commitment to a culture of quality certifications. Focus areas to include are:
  - Internal policies – Develop policies or procedures to ensure quality and accurate use of the certifications. Incorporate connections into existing relevant policies for sustainability as appropriate.
  - Internal systems and processes, such as
    - Systems and processes to store and secure any necessary data and to focus on ensuring that data are actively used in decision-making and evaluation measures
    - Processes to sign up, pay for, and take exams.
    - Integration with existing programs such as Credit for Prior Learning, Credit for Work or Internship Experiences, or Capstone Projects.
  - Human Capital– Identify the human capital available and determine roles and responsibilities. Clearly identify how industry will be engaged in the process.

- Create a shared vision and purpose

  A common vision and purpose for including industry certifications is critical for long-term success and sustainability. Ensuring that all stakeholders understand the purpose and potential allows for focus and clarity. Public meetings can engage constituents in the design and purpose of implementing industry certifications. If the purpose of including industry certifications can be constructed transparently, communication to stakeholders is lessened.

- Identify possible certifications – Certifications could be identified at the district level, the programs level or the individual student level. Industry or state generated lists may also be available. In any case, consideration should be given to possible alignments with:
  - District's curriculum and academic standards
  - Existing or expected career pathways and/or CTE programs
  - Funding sources to support the costs of certifications
  - Local, regional, and state workforce needs
  - Accessible post-secondary programs
  - ICAP implementation
  - Alignment to concurrent enrollment opportunities
  - List of approved industry-recognized credentials for incentives, Colorado Career Development Success Program, http://www.cde.state.co.us/postsecondary/hb16-1289

- Create Industry Validation Process **-** Once possible certifications have been identified, consider processes for recognizing and documenting alignments to

  - Course Content through a sequence of courses (career pathways)
  - Core content standards and CTE standards (*Standards alignment section*)
  - Career and Technical Education (CTE) programs and/or courses *(CTE integration section)*
  - Alignment to Business/Industry needs and standards *(Industry Engagement section)*
  - Certifications and/or programs at post-secondary institutions *(Post-secondary alignment section)*

- Identify Accountability Metrics - Identify data related to the implementation of recognized certifications to collect. Examples include:

  - Number of students and type of certificates that are awarded
  - Number of students who earned a certificate that are hired in the industry of their certification
  - Number of students transitioning to post-secondary programs or additional training that align with the certification

- Create an external and internal communication plan

- Create an internal staff training plan

STANDARDS ALIGNMENT

Utilization of industry certifications to show academic knowledge and skill mastery for graduation could require the district to validate the academic standards that are aligned in the certification attainment process, depending on district policy. Alignment between an industry certification and academic standards can be challenging:

- Industry certifications are utilized to measure skills and industry knowledge, which can look different than academic standards.

- Industry certifications vary widely both between and within industries. Alignment to standards may look different for each individual certification.

Academic alignment to industry certifications can be accomplished through utilization of various resources:

- Industry Certification Governing Body- The governing body for an industry certification can often provide the specifications of the knowledge and skills that are assessed within the process of attaining the certification. Some may have an existing crosswalk between the technical content and academic standards that are aligned. (See list of certifications)

- Colorado Career and Technical Education (CTE)- CTE programs are built from state recognized technical standards. In some programs, these standards are created to align to courses that lead to an industry certification. Industry can play a key role in supporting the development of these programs to ensure that the content covered supports the competencies needed to earn the industry certification. Colorado CTE standards have been cross-walked to Colorado academic standards and can be found at http://coctestandards.cccs.edu/.

- Industry representatives- Representatives who have obtained the certification being considered can assist in identifying the academic content that is addressed in the industry certification process. The O*NET (Occupational Information Network) has resources that provide information on specific skills needed for jobs based on SOC codes (Standard Occupational Classification). O*NET identified skills can be found at http://www.onetcodeconnector.org/.

Steps for Standards Alignment

- Establish a standards alignment committee for the certification program area. This role of this committee is to:

    o Document the competencies that are developed and demonstrated through the certification process. These are often identified by the governing body of the certification.
    o Identify and document the core competencies that are demonstrated through the attainment of the industry certification. The Colorado academic standards can be found at (http://www.cde.state.co.us/standardsandinstruction/GradeLevelBooks)
    o Periodically review the identified alignments to maintain relevancy and currency

CTE'S ROLE IN INDUSTRY CERTIFICATIONS

Career and Technical Education programs are organized educational programs offering sequences of courses directly related to preparing individuals for paid or unpaid employment in current or emerging occupations requiring less than a baccalaureate degree. (Carl D. Perkins Vocational and Technical Education Act, Public Law 105-332)

The Carl D. Perkins Career and Technical Education Improvement Act of 2006 provides federal career and technical education funds to states. The Act urges states to use technical skill assessments aligned with industry-recognized standards to measure CTE students' technical achievement. While there are many ways to demonstrate this technical achievement, industry certifications offer a vetted method of signaling that students have acquired a defined set of skills and knowledge. See the Colorado Community College System website for more information on Technical Skills Attainment: http://coloradostateplan.com/administrator/perkins/cte-best-practices/assessing-career-and-technical-skills/

CTE programs offer a unique opportunity for the implementation of industry certifications into the curriculum. Programs often have an appropriate sequence of courses that seamlessly lead to an industry certification. Note that while there are community/technical college certificates signifying completion of a series of courses, this is not the same as an industry recognized certification. Completion of a community/technical college series of courses may or may not prepare a student to take the assessment to earn an industry recognized certification. CTE Plans of Study and Individual Career and Academic Plans (ICAP) can be used to guide students to develop and maintain a personalized plan that will ensure program and workforce success. These plans of study can often lead to identified industry certifications, providing a guided pathway toward earning these certifications. Examples of these types of plans of study can be found in the appendix. More information on plans of study can be found here: http://www.coloradostateplan.com. More information on Individual Career and Academic Plans can be found here http://www.cde.state.co.us/postsecondary/icap

INDUSTRY ENGAGEMENT

Industry engagement involves partnering with industry stakeholders to create educational programs that enable young people to acquire the knowledge, skills and attributes that are relevant in the current workforce. Industry involvement can be fostered at the district level, the program level, or even at the individual teacher or student level.

Connections with industry allow for:
- The community to be linked to the educational system via business, industry, and labor representatives that add expertise and resources to the certification program;
- Identification of new and emerging opportunities leading to modification of existing or creation of new certification programs;
- Communication among education, business, and industry regarding employment needs of the community;
- Validation of certification programs by providing student competency lists and reviewing curriculum;
- Assurance that each career pathway academic ladder matches the corresponding industry career ladder and career pathways within the community;
- Discussion of student outcomes (completion rates, placement rates, and state licensing examination outcomes);

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- Relevancy of programs through assessment of equipment and facilities available and recommendations as needed;
- Opportunities for work-based learning experiences for learners and training opportunities for educators.
- Advocacy of certification programs to communities and
- Placement of program completers; and
- Leveraging of community resources (equipment, facilities, materials, and broker community partnerships).
- Possible funding opportunities for programs and/or certifications

Models of Industry Engagement

- Establish or research existing models for industry engagement for the certification areas.
  - o Every approved career and technical education (CTE) program in Colorado is required is engage with industry through a program advisory committee. Each advisory committee is made up of individuals with experience and expertise in the occupational field(s) that the program serves who advise educators on the design, development, implementation, evaluation, maintenance, and revision of Career and Technical Education (CTE) programs within a career pathway. For more information on CTE Advisory committees see: http://www.coloradostateplan.com/AdvCommHdbk/AdvCommDev.htm
  - o Existing partnerships may exist between education and industry through a Sector Partnerships model. An essential component of this model is the support of current or the establishment of new career pathways. (See Sector Partnerships section).
  - o Individual districts in Colorado have engaged with business in their communities. Please see examples from Promising Practices on the CDE website: https://www.cde.state.co.us/postsecondary/grad-promising#industryimplementation

SECTOR PARTNERSHIPS/CAREER PATHWAYS

A sector partnership is a model adopted by Colorado for workforce and economic development to ensure that the state has a skilled workforce trained to match the needs of local industry and to maintain the state's economic competitiveness.

At the state level, the Colorado Workforce Development Council is the state-wide convener and facilitator for sector partnerships. The Colorado Workforce Development Council (CWDC) is a public-private partnership of business, economic development, education, workforce development, and government at the local, regional, and state levels. CWDC owns responsibility for coordinating the work of the education and training partners to work with industry in educating and training the workforce of the future.

The work of CWDC and its other statewide partners such as the Colorado Department of Labor and Employment is to promote business-led regional public-private partnerships to address the skill needs of critical industries in a region.

Sector partnerships:
- bring employers from the same industry together with the education, training and other community support programs needed to implement solutions and services that ensure a target industry thrives.

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- support current or the establishment of new career pathways. Career pathways are a series of connected education and training programs, work experiences, and student support services that enable individuals to secure a job or advance in a demand industry or occupation.
- can be a resource for identifying industry certifications
- are focused at the local and regional level, not the state level

There may already be an established partnership between education and business through a sector partnership in your area. Check the CWDC website or with your local workforce center to learn about sector partnerships in your region.

https://www.colorado.gov/sectors
https://www.colorado.gov/cwdc
https://www.colorado.gov/pacific/cwdc/sector-strategies

POSTSECONDARY ENGAGEMENT

Concurrent enrollment and stackable certifications

Industry certifications can also be an additional pathway between high school and postsecondary education. Because industry certifications may be earned through a series of courses that are taught through a postsecondary education institution, a student could potential begin earning postsecondary credits while still in high school and working towards an industry certification. This opportunity for concurrent enrollment is one that many districts and schools already utilize effectively. These partnerships between high schools and institutions of higher education can provide support for students to develop a pathway towards an industry certification. Concurrent enrollment courses can be utilized for CTE postsecondary programs as well, many of which may end with the ability to sit for an industry certification examination. For resources on implementing concurrent enrollment in your district, visit: http://www.cde.state.co.us/postsecondary/concurrentenrollment

Another key way for supporting students' educational and employment outcomes is providing opportunities to earn stackable credentials. These are credentials that are "part of a sequence of credentials that can be accumulated over time to build up an individual's qualifications and help them to move along a career pathway or up a career ladder to different and potentially higher-paying jobs." Because there are an overwhelming number of credentials that a student might be able to earn, identifying a career pathway, and the stackable credentials that can be earned to move along that pathway, can help narrow down the focus on what credential to start with, and subsequent certifications that can be earned. Industry groups are working on identifying a series or sequence of stackable credentials that can prepare students for employment in the industry. Some examples specific to Colorado include Advanced Manufacturing Pathways, and Healthcare Pathways. For more information on stackable credentials and further examples:

http://wdr.doleta.gov/directives/attach/TEGL15-10a2.pdf
http://www.clasp.org/resources-and-publications/files/2014-03-21-Stackable-Credentials-Paper-FINAL.pdf

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APPENDIX X: RESOURCES

Several schools, districts and organizations have developed tools and resources to support the effective implementation of industry certifications. Below are links to those organizations

STATE LEVEL EXAMPLES:

Florida
http://www.fldoe.org/workforce/indcert.asp
Brevard Public Schools, Florida: www.ctebrevard.com/IndustryCert-Student.htm

Georgia
http://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Pages/Industry-Certification-Standards.aspx

Maine
http://www.maine.gov/doe/cte/

Maryland
www.MarylandPublicSchools.org. (Click first on Divisions and then on Career and College Readiness.)

Mississippi
http://www.mde.k12.ms.us/career-and-technical-education

Pennsylvania
http://www.pde.state.pa.us/portal/server.pt/community/teacher_resources/7392/industry-recognized_certifications_for_career_and_technical_education_programs/507887

Texas
http://www.achievetexas.org/
http://cte.ed.gov/docs/DQI/TEXAS%204%20Industry%20Certification%20Guide.pdf

Utah
http://www.schools.utah.gov/ate/skills/skills.htm

Virginia
www.doe.virginia.gov/instruction/career_technical/path_industry_certification/index.shtml

PROMISING PRACTICES

Colorado Department of Education, Graduation Guidelines
https://www.cde.state.co.us/postsecondary/grad-promising#industryimplementation

Colorado Talent Pipeline Report - https://www.colorado.gov/pacific/cwdc/colorado-talent-pipeline-report - "explores issues related to the supply and demand of talent in Colorado and strategies for strengthening our talent pipeline."
⇨ See also the list of approved Industry-Recognized Credentials for Colorado Success Development Program: https://www.colorado.gov/pacific/sites/default/files/10-2017_HB16-1289_Approved_Programs_update.pdf

Work-Based Learning (WBL) - https://www.colorado.gov/pacific/cwdc/work-based-learning-resources

The TalentFOUND gateway - http://talentfound.org/ - "connects individuals and businesses with the most relevant tools and resources of the Colorado talent development network."

Colorado Labor Market Information - https://www.colmigateway.com – is a "career assessment and labor market information system."

RESEARCH & RELATED RESOURCES

Blansett, S. P., & Gershwin, M. C. (2005). Developing a statewide work readiness credential in Colorado: A preliminary assessment. *Report to the Colorado Workforce Development Council*. https://e-colorado.coworkforce.com/File.aspx?ID=27532

Castellano, M., Stone, J. R., & Stringfield, S. (2005). Earning industry-recognized credentials in high school: Exploring research and policy issues. *Journal of Career and Technical Education, 21*(2), 7-34. http://scholar.lib.vt.edu/ejournals/JCTE/

Lohman, E. M., & Dingerson, M. R. (2005). The effectiveness of occupational-technical certificate programs: Assessing student career goals. *Community College Journal of Research and Practice, 29*(5), 339-355. http://dx.doi.org/10.1080/10668920590911850

Muller, R. D., & Beatty, A. (2008). Work readiness certification and industry credentials: What do state high school policy makers need to know? *Measures that Matter*. http://www.achieve.org/work-readiness-certification-and-industry-credentials-what-do-state-high-school-policy

Packard, B. W., Leach, M., Ruiz, Y., Nelson, C., & DiCocco, H. (2012). School-to-work transition of career and technical education graduates. *The Career Development Quarterly, 60*(2), 134-144. http://onlinelibrary.wiley.com/doi/10.1002/j.2161-0045.2012.00011.x/abstract

Zinser, R., & Lawrenz, F. (2004). New roles to meet industry needs: A look at the Advanced Technological Education program. Journal of Vocational Education Research, 29(2), 85-99. http://eric.ed.gov/?id=EJ720021