



Defining High-quality CTE: Quality CTE Program of Study Framework, Draft Version 3.0

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“High-quality career and technical education” has become a national catchphrase—in use by policymakers, practitioners and a wide variety of influential education and workforce development stakeholders. But what is high-quality CTE? How should this term be defined, and can it be used to evaluate programs, determine areas for targeted improvements and recognize successful elements that should be scaled?

To help synthesize the myriad voices that are a part of the dialogue on high-quality CTE, ACTE is embarking on a multi-step project to identify a comprehensive, research-based quality CTE program of study framework, test the framework and integrate it into our efforts to recognize and disseminate information on best practices within CTE. The first phase of the broader project focuses on defining high-quality CTE, and our first research objective is to identify the specific characteristics of a high-quality CTE program of study.

In our first publication related to this effort, [Defining High-quality CTE: Contemporary Perspectives on CTE Quality](#), we examined national quality frameworks for CTE, career pathways and related initiatives. Through our analysis, we identified a need for greater clarity and consistency in the conversation about high-quality CTE, particularly as it relates to individual local programs.

With this in mind, we began development of an ACTE high-quality program of study framework. To create our framework, we conducted a deeper review of the existing program-quality materials that were the subject of our original paper, supplementing with more detailed companion documents, state policy documents and tools we previously excluded from our analysis because they address a single program element in-depth. After releasing the first draft in November 2015, we conducted a number of focus groups and solicited feedback on the elements and their potential use, made revisions to the framework (version 2.0), then conducted a survey and expert review. The third draft of the ACTE framework, incorporating the latest round of feedback, is presented below.

Proposed Uses

The draft ACTE quality framework elements and criteria below are designed to apply to single, local CTE programs of study spanning secondary and postsecondary education, although they may be adapted to other units of analysis. We anticipate that this tool will be used voluntarily for self-evaluation, program improvement and to encourage secondary-postsecondary collaboration, and have plans to develop more robust tools for these purposes as the framework is finalized. It may also be used for more formal evaluation or recognition programs in the future as more resources are developed around the framework.

Evaluating a program of study against the framework elements will require a collaborative effort from local secondary and postsecondary CTE faculty, staff and stakeholders, including educators, career guidance professionals and advisory group members. A variety of materials should be consulted in order to demonstrate a program of study's performance on each of the framework elements. For example, a local CTE administrator might serve as the primary point of contact, but would gather materials and input from colleagues, and ultimately use the results for continuous program improvement.

Please note that the 12 top-level framework elements, and the sub-indicators within each element, are presented in no particular order. The numbering and lettering below merely facilitate ease of reference. Currently, all sub-indicators have equal weight, although it is possible that future versions will give more weight to some indicators than to others. In addition, indicators across the framework are designed to be mutually exclusive to the extent possible, so are not repeated across categories. For example, some of the elements in the section on "Data and Outcomes" might also support equity, but only appear in one category. The final framework will include a cross-walk of possible related elements.

1. Standards-aligned and Integrated Curriculum

- a. The program of study is developed with employer input to prepare students for both further education and in-demand and emerging careers.
- b. The curriculum is based on industry-validated technical standards and competencies.
- c. The curriculum is aligned with relevant content and standards for core subjects, such as reading, math and science, including institution, state and/or national standards as deemed appropriate.
- d. The curriculum incorporates employability skill standards that help students succeed in the workplace, such as problem solving, critical thinking, teamwork, communications and workplace etiquette.
- e. The curriculum allows for student application of integrated knowledge and skills in authentic scenarios.
- f. Program of study standards are publically available and accessible, as appropriate, to students, parents/guardians, employers and the community.
- g. The curriculum is reviewed regularly by all relevant stakeholders and revised as necessary to reflect the latest advances in the field, evidence-based program models and evaluations of student performance.

2. Sequencing and Articulation

- a. The CTE program of study includes a sequence of courses and/or competencies across secondary and postsecondary education that incorporates technical and academic knowledge and skills.
- b. The program of study starts with broad foundational knowledge and skills and progresses in specificity to build students' depth of knowledge and skills.
- c. Content and standards within the CTE program of study are non-duplicative and vertically aligned to prepare students to transition seamlessly to the next level of education.
- d. The CTE program of study sequence leads to one or more recognized postsecondary credentials (including industry certifications, licenses, apprenticeship certificates and postsecondary certificates or degrees).
- e. Students in the CTE program of study have opportunities to earn postsecondary credit while in high school.
- f. Secondary and postsecondary CTE educators, along with representatives of the employer community, collaborate regularly on course sequencing, vertical alignment and opportunities for postsecondary credit.
- g. The program of study is coordinated with broader career pathways systems, as defined in WIOA, such as through the development of stackable credentials, where appropriate and available.

3. Student Assessment

- a. Formative and summative assessments are integrated throughout the program of study to validate student learning gains, including both classroom/school-based and standardized, third-party assessments, as appropriate.
- b. Assessments are aligned to program standards and curriculum and appropriate to students' current level of knowledge and skill attainment.
- c. Assessments are valid, reliable, and developed or chosen in accordance with relevant quality standards.

- d. The CTE program of study incorporates multiple forms of assessment, including performance-based assessment where students must demonstrate the application of their knowledge and skills.
- e. Assessments within the CTE program of study provide objective information on student attainment of industry-validated technical knowledge and skills provided by program curriculum.
- f. Assessments within the CTE program of study provide objective information on student attainment of academic knowledge and skills provided by program curriculum.
- g. Assessments within the CTE program of study provide objective information on student attainment of employability knowledge and skills provided by program curriculum.
- h. The CTE program of study prepares students for assessments that lead to recognized postsecondary credentials, where available and appropriate.
- i. Performance data from assessments is used for continuous program improvement.

4. Prepared and Effective Program Staff

- a. CTE educators in the program of study meet minimum state, district and/or institution certification and licensing requirements.
- b. CTE educators maintain up-to-date knowledge and skills across all aspects of industry and have appropriate industry-relevant credentials.
- c. CTE educators cultivate relevant evidence-based pedagogical knowledge, skills and experiences.
- d. CTE educators engage in ongoing, rigorous professional development on a wide range of topics covering the elements of a high-quality CTE program, which might include pursuit of advanced educator certification.
- e. CTE educators demonstrate leadership and commitment to the profession.
- f. CTE educators have the time, resources and support to implement high-quality CTE programs.
- g. CTE educators, academic educators, counselors, administrators and other relevant staff collaborate regularly and frequently to coordinate curriculum, instruction, assessment and extended learning activities and to analyze data for program improvement.

5. Engaging Instruction

- a. Program of study instruction is driven by relevant content area standards and learning objectives.
- b. Project-based learning and related instructional approaches, such as problem-based, inquiry-based and challenge-based learning, are fundamental to the CTE program of study.
- c. Contextualized instruction results in students applying technical, academic and employability knowledge and skills within authentic scenarios.
- d. Literacy, mathematics and science content are integrated into CTE instruction through collaboration among educators.
- e. Instruction incorporates relevant equipment, technology and materials tools to support learning.
- f. Instruction is flexible, differentiated and personalized to meet diverse student learning styles, needs and interests.
- g. Learning experiences are organized and facilitated in a manner that creates a positive classroom culture.

6. Access and Equity

- a. The CTE program of study is promoted to all potential participants and, where appropriate, their parents/guardians, in a manner that is free from bias, inclusive and non-discriminatory.
- b. Students who have been traditionally underrepresented, including by gender, race and ethnicity, and special population status, are actively recruited.
- c. Career guidance is offered to all potential and current program of study participants in a manner that is free from bias, inclusive and non-discriminatory and that takes into account student interests, preferences and abilities.
- d. Where appropriate, accommodations to facilities and equipment as well as curriculum, instruction, materials and assessment are provided to ensure all students have the opportunity to achieve success in the program.
- e. Where appropriate, support services, such as tutoring and transportation assistance, are provided to ensure all students have the opportunity to achieve success in the program.
- f. Curriculum, instruction, materials and assessment are free from bias, inclusive and non-discriminatory.

- g. Appropriate actions are taken to eliminate barriers to extended learning experiences, such as work-based learning, CTSO participation and postsecondary credit attainment, for all students, including special populations.
- h. Educators have appropriate training, resources and supports to effectively meet the needs of a diverse student population.

7. Facilities and Equipment

- a. Facilities and equipment used in the program of study reflect current workplace, industry, and/or occupational practices and requirements.
- b. Facilities and equipment support and align to curriculum standards and program objectives.
- c. Facilities and equipment meet appropriate federal, state and local standards for occupational safety and health as applied in the related industry.
- d. Students demonstrate safe and appropriate use and maintenance of facilities and equipment used within the CTE program of study.
- e. Processes are defined and resources provided to regularly inspect, update and replace facilities and equipment as necessary.
- f. Program of study education and business partners collaborate to maximize student access to relevant facilities and equipment.
- g. Appropriate materials, tools, supplies and personal protective equipment are available and used appropriately.
- h. Facilities are free from bias, inclusive and non-discriminatory, and they meet all Title IX, ADA and other accessibility requirements.

8. Business and Community Partnerships

- a. Representatives of the program of study actively conduct outreach activities to develop partnerships to ensure programs of study are informed by employer and community needs.
- b. The program of study has a formalized, structured approach to facilitating partnerships, such as an advisory board or sector partnership.
- c. Partners include a diverse range of employers; industry representatives; community, workforce and economic development agencies; and other education stakeholders.
- d. The program of study has partners who:
 - identify, validate and review curriculum for technical, academic and employability knowledge and skills that meet the needs of students and industry
 - identify appropriate assessments and recognized postsecondary credentials
 - evaluate equipment, facilities and materials to ensure they are consistent with industry standards
 - provide input and recommendations on current and future workforce demand and skill needs to inform updates to the programs of study
 - provide input on the further education and training necessary for career pathways
 - identify, provide and evaluate work-based learning experiences for students
 - participate in CTSO activities; for example, by serving as mentors and judges
 - offer opportunities for educators to stay current with industry-relevant knowledge and skills, such as externships
 - support it in tangible ways, such as through investing funds, providing in-kind support, and/or helping raise external funds to meet program goals.
 - advocate for and promote the program
 - help to evaluate the effectiveness of the program of study in preparing students for further education and careers
- e. The effectiveness of partnerships is assessed through continuous evaluation by all stakeholders.

9. Career Development

- a. Comprehensive career development is delivered in a coordinated, sequenced way both before students enter into the program of study and as they progress throughout to promote and support the career decision-making and planning of all students.

- b. Each CTE student in the program of study has a personalized, multi-year education and career success plan that reflects exploration of the student's interests, preferences and abilities, and informs course selection, planning for further education and a career, and involvement in extended learning.
- c. Career development activities are aligned with relevant national, state, and/or local standards.
- d. Students in the program of study and their parents/guardians, as appropriate, are provided accurate and timely information on:
 - extended learning experiences available through the program of study, such as work-based learning, CTSO participation and postsecondary credit attainment
 - further education and training options, including application procedures, enrollment, financing, and their projected educational, employment and earnings outcomes
 - regional occupational trends and outlook, high-demand and high-wage career opportunities, and the educational pathways that lead to current and projected career opportunities
- e. Students in the program of study have access to job search information and placement services as they near completion of the program of study.
- f. Guidance, counseling and advisement professionals have access to up-to-date information and training about extended learning experiences, education and training options, and regional occupational trends, in order to aid students in education and career planning and decision making.

10. Career Technical Student Organizations (CTSOs)

- a. A CTSO is an integral, intra-curricular part of the CTE program of study, available to every student at some point during the program.
- b. The CTSO is aligned with relevant national, state and/or local standards.
- c. CTSO activities develop and reinforce relevant technical, academic, and employability knowledge and skills.
- d. The CTSO provides opportunities for students to interact with business professionals and leaders.
- e. The CTSO provides opportunities for students to participate in relevant competitive events.
- f. The CTSO provides opportunities for students to participate in relevant community and school service activities.
- g. The CTSO provides opportunities for students to participate in leadership development activities.
- h. The CTSO is closely supervised by an educator and/or other appropriate staff with clearly defined roles as well as resources and time for developing, facilitating and evaluating the CTSO.
- i. The effectiveness of CTSO activities is assessed through continuous evaluation by all stakeholders.

11. Work-based Learning

- a. Work-based learning is organized in a sequenced continuum that progresses in intensity as a student moves through the program of study, including a range of activities such as workplace tours, job shadowing, school-based enterprises, internships and apprenticeships.
- b. Work-based learning experiences are an integral part of the program of study curriculum and the full continuum is accessible to every student in the program of study.
- c. The work-based learning continuum is aligned with relevant national, state and/or local standards.
- d. Work-based learning experiences develop and reinforce relevant technical, academic and employability knowledge and skills.
- e. Work-based learning experiences are aligned with student interests, career goals and personalized learning plans.
- f. Students have meaningful interactions with business professionals and leaders at school, in workplaces, in the community and/or virtually.
- g. Requirements and procedures for work-based learning experiences that address access, selection, liability, supervision, safety, transportation, learning objectives and evaluations are formalized with employers, students and, where appropriate, parents/guardians.
- h. Training should be provided to students and employers in advance of work-based learning experiences, addressing each stakeholder's rights and responsibilities as well as safety and appropriate behavior.
- i. Work-based learning experiences comply with relevant federal, state and local laws and regulations.
- j. Work-based learning experiences are closely supervised by an educator and/or other appropriate staff with clearly defined roles as well as resources and time for developing, facilitating and evaluating the experience.
- k. Employers play a leadership role in developing, facilitating and evaluating the work-based learning experience.

- l. Students engage in reflection and document learning resulting from work-based learning experiences, such as through a portfolio or presentation.
- m. The effectiveness of the work-based learning continuum for students and employers is assessed through continuous evaluation by all stakeholders.

12. Data and Outcomes

- a. Collaborative processes and supports are in place in the program of study to ensure the timely and accurate collection and submission of data to meet federal and state requirements as well as additional local needs.
- b. Federal and state performance indicators form the foundation of data collection, analysis and reporting; however, additional data on access and multiple measures of student success, such as return on investment, should be included.
- c. Privacy and security protections are in place for data collection, storage, analysis and reporting. Protections should adhere to all state and federal privacy laws.
- d. Educators have access to relevant valid and reliable aggregate data on all students participating in the program of study.
- e. Educators have access to relevant valid and reliable data disaggregated for subpopulations by gender, race and ethnicity, and special population status, thus facilitating comparisons of access and performance among subpopulations and with the general student population.
- f. There is a formal process in place for the systematic and continuous use of data for program improvement, including identifying and addressing equity gaps.
- g. All stakeholders understand why data is collected, how it will be used, and its value in supporting student success.
- h. Data is shared, where appropriate, in an easy-to-understand format with students, parents/guardians, partners and the community.