STANDARDS-ALIGNED AND INTEGRATED CURRICULUM

By Catherine Imperatore

STANDARDS-BASED, COLLABORATIVELY DEVELOPED CURRICULUM IS THE BACKBONE OF HIGH-QUALITY career and technical education (CTE) programs of study. For this reason, Standards-aligned and Integrated Curriculum is one of ACTE's 12 elements of high-quality CTE within the *Quality CTE Program of Study Framework*.

The Standards-aligned and Integrated Curriculum element of ACTE's quality framework includes seven criteria that address the development, implementation and revision of program of study curriculum, including the relevant knowledge and skills taught in the program and the standards on which they are based. The criteria listed below are from the 2018 version of the ACTE *Quality CTE Program of Study Framework*.

Criteria for High-quality Curriculum

a. The curriculum is based on industry-validated technical standards and competencies.

b. The curriculum is aligned with relevant content and standards for core subjects, such as reading, math and science, including federal, state and/or local standards, as appropriate.

c. The curriculum incorporates employability skill standards that help students succeed in the workplace, such as problem solving, critical thinking, teamwork, communications and workplace etiquette.

High-quality CTE curriculum develops student competency in three content areas — technical, academic, and employability knowledge and skills — each of which is important for student success. First, when building a new curriculum or choosing an established curriculum, quality CTE programs typically begin by considering the underlying technical skill standards. The technical skill standards should be developed or validated by multiple experts from the relevant industry or career field. This could occur at the national, state and/or local levels, depending on the source of the standards.

In addition to these technical skills, high-quality CTE programs of study make explicit the academic content embedded within CTE curriculum and ensure alignment with relevant academic standards. This integration has been a major priority in CTE during the past several decades and has helped CTE transition to a system that develops college and career readiness. In many places, this standards alignment has been completed at the state level, but individual programs have a role to play in implementing an integrated curriculum.

Last, but crucially, high-quality CTE programs of study incorporate content and standards that promote workplace success, such as skills in critical thinking, collaboration, communication and professional behavior. Employability skills are not specific to any one industry or occupation, although programs may emphasize skills with relevance to a particular career area, such as safety in a laboratory setting.

d. The program of study curriculum is developed with employer input to prepare students for both further education and in-demand and emerging careers.

e. The curriculum allows for student application of integrated knowledge and skills in authentic scenarios.

To ensure that the program of study incorporates the most relevant technical, academic and employability content and standards, CTE programs of study can engage administrators, instructors and subject matter experts, such as business and industry partners, in collaborative processes like Developing a Curriculum (DACUM). A criterion in the Business and Community Partnerships element addresses the role of subject matter experts in curriculum development and revision, while criteria in the Prepared and Effective Program Staff element describe how CTE and academic staff need time, resources and support to collaborate on curriculum.

However, in many career areas, it is not necessary to build from the ground up because industry and education groups have already developed and validated curriculum that can be integrated into a program. Industry-developed curricula can be found in automotive technology, manufacturing, IT, construction, engineering and biomedical science, among other fields.

Curriculum should also be built to allow frequent opportunities for students to practice their knowledge and skills through hands-on, applied learning and to demonstrate their attainment through performance assessments. Criteria in the Student Assessment and Engaging Instruction elements further address these issues.

f. Program of study standards are publicly available and accessible to students, parents/guardians (as appropriate), partners and the public.

g. The curriculum is reviewed regularly by all relevant stakeholders and revised as necessary to reflect the latest advances in the industry, evidence-based program models and evaluations of student performance.

Curriculum is not static, but must be revisited on a regular basis to ensure it reflects the latest knowledge from industry and academia as well as your own students' performance. This may include new technology and industry processes, student assessment results, and innovative ways of delivering knowledge and skills to students. Curriculum review is another opportunity to engage business and community partners in ensuring that your program is up to date.

Relatedly, the program of study curriculum must be transparent. Curriculum and standards should be clearly communicated to students, parents (when those students are minors), partners and policymakers so that all stakeholders know the skills that students are expected to develop.

Success Strategy: Employability Skill Modules

High-quality CTE programs are increasingly explicit about the employability knowledge and skills included in their curriculum. One institution — Feather River College in Quincy, California — took the lead in this area in 2013, using state grant funding to convene a series of panels that brought together employers, researchers, students and teachers to identify 10 relevant 21st century skills: adaptability, analysis/solution mindset, collaboration, communication, digital fluency, entrepreneurial mindset, empathy, resilience, self-awareness and social/diversity awareness. Feather River then developed and piloted curriculum to address these skills. The initiative has evolved into New World of Work and is now available to all California community colleges. New World of Work features free modules for each of the 10 skills that include lesson plans, slide decks, worksheets, assessments and "what not to do" videos that spark discussion. Customized professional development is available for instructors.

Learn More and Assess Your Programs

Practitioners can turn to ACTE's High-quality CTE Tools online library for publications and guides on CTE curriculum. The Standards-aligned and Integrated Curriculum section features case studies and tips on curriculum development, course redesign and curriculum integration, as well as professional development models geared at improving the instruction of math, reading and writing tasks naturally occurring in CTE curricula.

In addition, practitioners can use the *Quality CTE Program of Study Framework Self-evaluation Instrument* to assess a single program, or multiple programs across a district or institution, in relation to the Standards-aligned and Integrated Curriculum element and all 12 elements of high-quality CTE. The rubric can be completed on paper or online, where users can receive automatically calculated scores, save and print their results, and be connected to the online library for areas identified as needing improvement. ■

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