

Career/Technical Education

► Not Your Father's Vocational Education

In recent years, career/technical education (CTE) has risen to the top of the education policy agenda for governors, legislators, and agency heads. As a result of informed interest among key education leaders, the CTE policies and programs being advocated and implemented today bear little resemblance to those in place not long ago.

Among the factors driving increased state policymaker interest in CTE are:

- A pervasive gap between workforce needs and the skills of entering workers
- The projected growth in skilled occupations requiring technical certification or a credential beyond a high school diploma
- Interest in improving high school graduation rates by helping students see connections between programs of study and career opportunities in high-wage, in-demand fields.

States are addressing these needs by incentivizing action in various ways. Among these diverse incentives are 1) "carrot" policies to encourage high school students to earn CTE credentials or to perform well on WorkKeys; 2) "stick" policies for schools and districts to ensure that CTE students are progressing toward career-readiness; and 3) development of supports for students at risk of falling short of career-readiness.

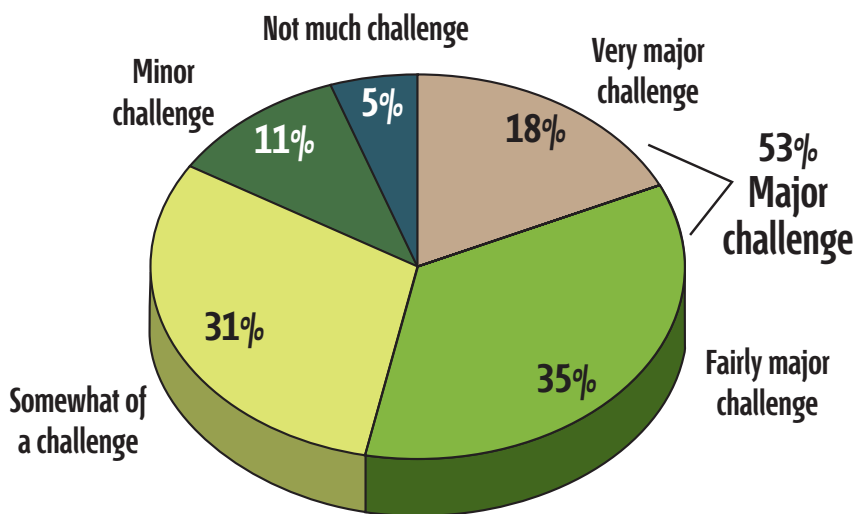
States also are increasingly blurring the lines between traditional "academic" and career/technical courses by incorporating core content standards, as appropriate, into CTE courses, and reframing dual enrollment programs, which in many states have been limited to traditional academic coursework.

This issue of *The Progress of Education Reform* will clarify how these approaches differ from CTE and career-readiness initiatives in the not-too-distant past, and identify states that are moving forward.

What's Inside

- Integrating career readiness measures in scholarship eligibility
- Weaving academic standards into CTE courses
- Including CTE in dual enrollment programs

How big a challenge is recruiting non-managerial employees with the skills, training, and education your company needs?



Source: John Bridgeland, Jessica Milano, and Elyse Rosenblum, *Across the Great Divide: Perspectives of CEOs and College Presidents on America's Higher Education and Skills Gap*, March 2011, p. 7.



Carrot Approach: Require CTE credential receipt as part of CTE honors diploma requirements

States have been offering a career/technical diploma (or endorsement on the standard diploma) to ambitious CTE students for decades. Students typically could receive a career/technical diploma or endorsement if they earned three or more units in a CTE course of study or career cluster; some states also asked for students to complete math or science units beyond those required for the standard diploma. However, without requiring eligible students to participate in real-world work experience or earn a CTE credential, such a recognition may not truly indicate a graduate is prepared to enter the world of work.

Nevertheless, as the examples in the table demonstrate, a few states have included real-world credentials or work experiences in the requirements for either a CTE diploma, an endorsement to the standard diploma, or a career readiness certificate.

State	Credential/endorsement	Credit requirements	Real-world credential as criterion for receipt	Work experience as criterion for receipt	Senior project
LA ¹	Career/Technical Endorsement	Complete career area of concentration	State board-approved industry-based certification (<i>or three college hours in a career/technical area that articulate to a postsecondary institution</i>)	EITHER: 90+ hours of work-based learning experience	OR: Senior project with 20 hours of related work-based learning plus mentoring
KY ²	Career Major Certificate	Four career-related credits relevant to a career cluster or major		Structured work-based learning experience *	Culminating project related to the career cluster or major
KY ³	Department of Education Career and Technical Certificate of Achievement	EITHER: Four credits within a career major	OR: Enrolling in a specific occupational area and successfully obtaining the competencies identified for a major (DOT) Dictionary of Occupational Title.	*See note	
VA ⁴	Career and Technical Education Seal (to diploma)	EITHER: Complete a prescribed sequence of courses in a CTE concentration or specialization w/ a minimum "B" average	OR: Pass a certification exam/occupational competency assessment OR: earn a Virginia professional license in a CTE field		

* All secondary CTE programs must *offer* opportunities for high-quality work-based learning experiences, i.e., (1) job shadowing; (2) mentoring; (3) internships; (4) school-based enterprises; (5) entrepreneurship; (6) clinicals; (7) cooperative education; (8) service learning; (9) apprenticeship; or (10) work experience.

Kentucky additionally issues the appropriate Kentucky employability certificate to any student meeting the WorkKeys threshold set by the Department of Workforce Investment.⁵

Until recently, Ohio CTE students earning a diploma with honors needed to meet nine out of 10 criteria, including the completion of “a career passport that reflects achievement of the occupational proficiency benchmark established for the Ohio career-technical competency assessment or the equivalent.” Effective January 2012, the requirements changed to seven out of eight criteria, one of which is completion of “four units in a career-technical education program that leads to an industry recognized credential, results in an apprenticeship, or is part of an articulated career pathway which can lead to postsecondary credit. If the student’s program design does not provide for any of these outcomes, then the student must achieve the proficiency benchmark established for the applicable Ohio career-technical competency assessment or the equivalent.” Another of the seven criteria in Ohio is meeting “the proficiency benchmark ... for the Ohio career-technical competency assessment ... or an equivalent assessment aligned with state-approved and industry validated technical standards[.]”⁶

Carrot Approach: Incorporate career-readiness measures in scholarship eligibility

By and large, state postsecondary scholarship eligibility hinges on traditional academic measures—grade point average, ACT or SAT scores, and/or completing specified academic courses. For the most part, measures of career-readiness have been excluded from state scholarship eligibility provisions.

But today, the need to fill existing positions in such skilled fields as advanced manufacturing have captured the attention of governors in states as diverse as **Kansas, Pennsylvania, and Maine**. Allowing students to meet scholarship eligibility requirements through either traditional academic prerequisites or career-readiness prerequisites simply makes sense.

State	Scholarship	Substitute what	...for what
LA ⁷	Taylor Opportunity Program for Students (TOPS)	Min. Silver-level score on WorkKeys	Minimum composite ACT score of 17, or SAT equivalent
ND ⁸	Academic or Career and Technical Education Scholarship	Min. “5” on the three WorkKeys assessments	Minimum composite ACT score of 24
WY ⁹	Hathaway Scholarship	Min. composite WorkKeys score	Minimum composite ACT score

Note: In both Wyoming and North Dakota, all 11th graders take the ACT or WorkKeys.

Stick Approach: Incorporate CTE measures in school and district accountability

The state accountability systems developed in the 1990s—and amended after enactment of the No Child Left Behind Act in January 2002—did not typically incorporate career-readiness metrics. State driven efforts—such as those launched by **North Carolina’s Blue Ribbon Testing Commission—Race to the Top** accountability initiatives, and more recently, the ESEA waiver process, have changed all that. (As of February 2013, ESEA waiver requests for 34 states and the District of Columbia have been approved.)¹⁰

The new generation of state accountability systems is taking diverse approaches to define “career readiness” and measure student status and growth. Rather than hewing strictly to “academic” assessments to gauge student performance, some states are integrating explicit career-ready assessments into accountability measures. For example, one of the five new indicators North Carolina has added to its high school accountability model the percentage of graduates who were CTE concentrators (students who completed at least four courses in a career cluster) and who received a Silver Level Career Readiness Certificate based on the three WorkKeys exams.¹¹

Other states are taking completion of real-world industry certifications into consideration. Under **Indiana’s** recently revised “A”–“F” accountability system, a high school’s “college and career readiness score” is based on the percentage of a graduation cohort who meet any of several indicators, including obtaining an industry certification. High schools can earn from zero to four points for the percentage of students who meet any of the several indicators, one of which is a career-readiness indicator.¹²

North Carolina has added to its high school accountability model the percentage of graduates who were CTE concentrators (students who completed at least four courses in a career cluster) and who received a Silver Level Career Readiness Certificate based on the three WorkKeys exams.

Supports for at-risk students

It's well and good to encourage students to earn recognized credentials and allow them to earn scholarships based on performance on work-ready assessments such as WorkKeys. But states also have an obligation to provide support for students in CTE programs, focusing in particular on students at risk of not achieving career-readiness before the end of grade 12.

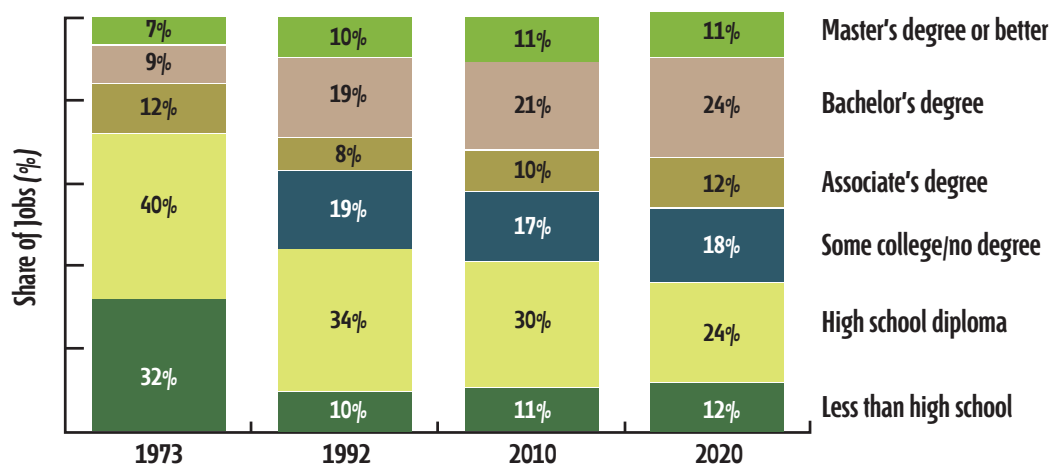
Kentucky permits students in grades 10–12 to take the three sections of the WorkKeys (Reading for Information, Locating Information, and Applied Mathematics), with the department of education paying for the initial administration of each. (Students pay if they wish to take the WorkKeys again.) A student whose WorkKeys scores indicate s/he needs assistance in any of the WorkKeys three skill areas—or in English, reading, or math—must have “intervention strategies for accelerated learning incorporated” into the student’s learning plan. These strategies must be individualized, in consultation with the parents, teachers, and student. State policy requires the Kentucky Department of Education, the Council on Postsecondary Education, and public postsecondary institutions to provide schools and districts with technical support in developing accelerated learning strategies.¹³

Kentucky legislation enacted in 2012 further demonstrates a commitment to supporting at-risk students, especially in grade 9. Based on the availability of funding, the department of education, in concert with other state agencies and entities, is required to recommend evidence-based models for addressing the needs of at-risk students. The legislation calls for the models to be incorporated into career and technical education programs, career academies, and career pathway programs of study. The models must reflect diverse approaches proven effective with at-risk students, targeting:

- ▶ Identification of students at risk of inadequate academic preparation for the next grade level, or at risk of dropping out
- ▶ Reduction of grade-9 retention rates (or failure in other grades)
- ▶ Improvement of student performance in reading and math, particularly in grade 9
- ▶ Help for students and their parents in identifying students’ occupational and educational goals, developing individual learning plans, and selecting the right programs of study to attain those goals.

The models must include elements such as career courses, including career exploration in the 9th grade that incorporates project-based application of 9th-grade reading, math, and science skills and that uses a wide variety of technology. Perhaps most importantly, the legislation calls for CTE teachers to provide evidence of increased academic achievement.¹⁴

Figure 2. By 2020, nearly two out of every three U.S. jobs will require some postsecondary education and training.



SOURCE: Anthony P. Carnevale, Tamara Jayasundera, and Andrew R. Hanson, *Career and Technical Education: Five Ways That Pay Along the Way to the B.A.*, September 2012, p. 2.

Authors’ analysis of March Current Population Survey data, various years; forecast of educational demand to 2020

NOTE: The ‘some college’ category was not measured in 1973.

Blurring the lines

Increasingly, states are blurring the distinction between CTE coursework and “traditional” academic programs. The following section identifies just two of the various state approaches that are evolving—integrating academic standards in CTE courses, and including CTE courses in dual enrollment programs.

Integrating academic standards into CTE courses

Virginia was a trailblazer state in blurring the lines between academic and CTE courses and assessments. As early as 1999, Virginia legislation called for the state board to incorporate the state standards (Standards of Learning) in math, science, English, and social studies into “vocational education,” and to establish a unit of “vocational education” specialists in the department of education. (Since then, Virginia and most other states have shifted language from “vocational education” to “career and technical education.”)

The 1999 legislation charged the specialists with “[assisting] in developing and revising local vocational curriculum to integrate the Standards of Learning,” among other tasks.¹⁵ While CTE teacher certification policies in many states do not specify that candidates be trained to help students achieve expectations set by state tests, Virginia’s teacher licensure policy requires every candidate for initial or continuing licensure—including CTE instructors—to receive professional development in instructional methods to help students prepare for the Standards of Learning end-of-course assessments.¹⁶

Through its authority conferred through subsequent legislative amendments, Virginia’s state board permits students who complete a CTE program sequence and either pass an industry-recognized exam or occupational competency assessment or earn a professional license in a CTE field from the Commonwealth of Virginia, to substitute such industry certification or state licensure exams for certain end-of-course assessments (“verified units of credit”).¹⁷

Other states have followed Virginia’s lead. For instance, the 2012 Kentucky legislation previously mentioned requires all high school-level CTE teachers, (although contingent on the availability of state or federal funds), to receive training in how to embed reading, math, and science knowledge and skills in specific CTE courses.¹⁸

Ensuring CTE teachers have current, real-world know-how in their field is also essential. Virginia is among the states that issues a teaching credential to an individual who has substantive work experience in the field in which the individual would be teaching, and completes modest teacher preparation requirements. In Virginia’s case, the technical professional license is awarded an individual who is recommended by an employing district, is licensed or certified in the CTE area, if applicable (or can demonstrate competency), provides evidence of at least two years or 4,000 clock hours of satisfactory occupational experience within the past five years in the teaching specialty for which the individual is seeking endorsement, and has completed nine semester hours of specified pedagogy courses.¹⁹

CTE and dual enrollment

By and large, the dual enrollment programs first adopted by states in the 1980s directed students toward participation in traditional academic coursework, and did not make explicit mention of CTE programs. All that is beginning to change.

Minnesota legislation enacted in 2012 authorizes students, starting in grade 10, to enroll in a CTE course at a Minnesota state college or university. If a student receives at least a “C” in a postsecondary CTE course, the institution must allow the student to continue taking postsecondary courses for secondary credit to specified limits (the equivalent of three academic years for those students beginning postsecondary enrollment in grade 10, two years for those starting in grade 11, and one year for those starting in grade 12).²⁰

Kentucky expanded pathways to postsecondary credit for high school students via an October 2011 memorandum of understanding (MOU) signed by leadership of the Kentucky Community and Technical College System (KCTCS), the Kentucky Department of Education, and the Kentucky Education and Workforce Development Cabinet. This MOU,

By and large, the dual enrollment programs first adopted by states in the 1980s directed students toward participation in traditional academic coursework, and did not make explicit mention of CTE programs. All that is beginning to change.

which defines the respective responsibilities of the local KCTCS college and secondary school, as well as joint responsibilities, makes clear that the collaboration is intended to provide “a seamless pathway to postsecondary education while reducing student expense and time to credential attainment. The ultimate purpose of dual credit is the completion of a postsecondary credential.”

The MOU spells out the criteria that courses must meet to be eligible for dual credit. Courses must meet not only state standards, but standards set by the Southern Association of Colleges and Schools—Commission on Colleges (SACS-COC) and national standards and best practices set forth by the National Alliance for Concurrent Enrollment Partnerships (NACEP). The MOU additionally requires that completed coursework be reflected on the student’s official college transcript, and be recognized for credit by all KCTCS institutions—so students can be assured that if they end up enrolling at a different KCTCS campus after high school graduation, those credits will be acknowledged, and not swept aside as costly “elective” credits that don’t count as core CTE courses toward degree completion.

The MOU also makes clear that students’ ability to cover tuition costs should not be an obstacle to course participation. When a course taken at a KCTCS campus is supported by state funding to the institution, students are deemed to have paid tuition. Students accessing dual credit courses taught by a college faculty member at their high school or partnering ATC/technical high school are eligible for a 50% tuition waiver (provided the college absorbs other costs). A 100% tuition waiver is available for dual credit courses taught in high school settings by secondary level instructors, as long as the high school absorbs instructional costs. Although an administrative charge is assessed students receiving a 100% dual credit tuition waiver, each KCTCS campus, in concert with local districts, is responsible for identifying local scholarship funds to pay these charges for students demonstrating financial need.

Most interestingly, the MOU reflects a KCTCS senate rule requiring that students who successfully complete KCTCS dual credit courses be awarded “special consideration in program admissions when matriculating to a KCTCS program with special or selective admissions requirements.”²¹

Conclusion

The current environment suggests that CTE programs will continue to evolve in the coming years. Governors’ 2013 state of the state addresses make clear that CTE is a clear component in a number of economic and workforce development plans. Observers speculate that 2013 may be the year that the Carl A. Perkins Act, last authorized in 2006, will see reauthorization (and revisions). And as 45 states and the District of Columbia move to implement Common Core State Standards, they must ensure that the standards are embedded with fidelity in CTE programs.

Whatever direction state CTE policy takes, state policymakers should be steadfast in ensuring there is no separate “arc of achievement” for CTE students.

ECS Resources

ECS State Policy Database: Career/Technical Education Summaries and links to newly enrolled or enacted legislation and recently approved state board rules from across the states. Updated weekly.

<http://www.ecs.org/ecs/ecscat.nsf/>

[WebTopicView?OpenView&count=-](http://www.ecs.org/ecs/ecscat.nsf/WebTopicView?OpenView&count=-1&RestrictToCategory=Career/Technical+Education)

[1&RestrictToCategory=Career/Technical+Education](http://www.ecs.org/ecs/ecscat.nsf/WebTopicView?OpenView&count=-1&RestrictToCategory=Career/Technical+Education)

ECS State Policy Database: Career/Technical Education—Career Academies/Apprenticeship

<http://www.ecs.org/ecs/ecscat.nsf/>

[WebTopicView?OpenView&count=-](http://www.ecs.org/ecs/ecscat.nsf/WebTopicView?OpenView&count=-1&RestrictToCategory=Career/Technical+Education--Career+Academies/Apprenticeship)

[1&RestrictToCategory=Career/Technical+Education--](http://www.ecs.org/ecs/ecscat.nsf/WebTopicView?OpenView&count=-1&RestrictToCategory=Career/Technical+Education--Career+Academies/Apprenticeship)

[Career+Academies/Apprenticeship](http://www.ecs.org/ecs/ecscat.nsf/WebTopicView?OpenView&count=-1&RestrictToCategory=Career/Technical+Education--Career+Academies/Apprenticeship)

At ECS’ 2013 National Forum on Education Policy!

Sessions will discuss career readiness initiatives in the states, as well as issues related to career readiness and CTE, including dual enrollment, STEM, teacher preparation, and postsecondary counseling, participation, and completion.

<http://www.ecs.org/NF2013>

Other Resources

Career and Technical Education: Five Ways That Pay Along the Way to the B.A. Identifies five CTE training pathways below the baccalaureate level that lead to middle-class wages.

<http://cew.georgetown.edu/ctefiveways>

From Cradle to Career: Educating our Students for Lifelong Success Provides recommendations from the Massachusetts Board of Elementary and Secondary Education’s Task Force on Integrating College and Career Readiness.

http://www.doe.mass.edu/boe/docs/2012-06/item1_report.pdf

Common Career Technical Core

A “state-led initiative to establish a set of rigorous, high-quality standards for Career Technical Education (CTE) that states can adopt voluntarily. The standards have been informed by state and industry standards and developed by a diverse group of teachers, business and industry experts, administrators and researchers.”

<http://www.careertech.org/career-technical-education/cctc/info.html>

Endnotes

- 1 LA ADMIN. CODE tit. 28, pt. CXV, § 2318(D)(6)(a)(iv)
- 2 705 KY. ADMIN. REGS. 4:231, Section 4
- 3 *ibid.*
- 4 8 VA. ADMIN. CODE § 20-131-50(K)(3)
- 5 KY. REV. STAT. ANN. § 158.6453(12)(c)
- 6 OHIO ADMIN. CODE § 3301-16-02(H)(2)(i), (I)(2)(e) and (f)
- 7 LA. REV. STAT. ANN. §3048.1(B)(2)(a)(ii)
- 8 N.D. CENT. CODE § 15.1-21-02.4
- 9 WYO. STAT. ANN. § 21-16-1303(b)(iii)
- 10 U.S. Department of Education, *ESEA Flexibility* website, (n.d.), <http://www2.ed.gov/policy/elsec/guid/esea-flexibility/index.html>, (accessed February 11, 2013).
- 11 North Carolina Department of Public Instruction, “New School Accountability model Focuses on Career and College Readiness,” August 24, 2012, <http://www.dpi.state.nc.us/newsroom/news/2012-13/20120824-01>, (accessed February 11, 2013).
- 12 IND. ADMIN. CODE tit. 511, r. 6.2-6-5.3
- 13 KY. REV. STAT. ANN. § 158.6453(12), §158.6459
- 14 KY. REV. STAT. ANN. § 158.818
- 15 VA. CODE ANN. § 22.1-227.1
- 16 VA. CODE ANN. § 22.1-298.1(D)(3)
- 17 VA. CODE ANN. §§ 22.1-227.1, 22.1-253.13:3; 8 VA. ADMIN. CODE § 20-131-50
- 18 KY. REV. STAT. ANN. § 158.818(4)
- 19 8 VA. ADMIN. CODE § 20-22-290(B)
- 20 MINN. STAT. ANN. § 124D.09(5a), (8)
- 21 *Dual Credit Memorandum of Understanding (MOU) between the Kentucky Community and Technical College System and the Kentucky Department of Education and the Kentucky Education and Workforce Development Cabinet*, October 2011.

©2013 by the Education Commission of the States (ECS). All rights reserved.

ECS encourages its readers to share our information with others. To reprint or excerpt some of our material, please contact ECS at 303.299.3600 or e-mail ecs@ecs.org.

The Education Commission of the States is a nationwide nonprofit organization formed in 1965 to help governors, state legislators, state education officials, and others to develop policies to improve the quality of education. ECS is the only nationwide, nonpartisan interstate compact devoted to education at all levels.

www.ecs.org

Past issues of
The Progress of
Education Reform
are available
on our website at:
www.ecs.org/per.

This issue of *The Progress of Education Reform* was made possible by a grant from the GE Foundation. It was written by Jennifer Dounay Zinth, Senior Policy Analyst and Co-Director, Information Clearinghouse, jdounay@ecs.org, 303.299.3689.



GE Foundation

Equipping
Education Leaders,
Advancing Ideas