# Regional Career-Technical Education Models

## Prepared for the California County Superintendents Educational Services Association

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In this report, Hanover Research presents a brief literature review of regional career-technical education (CTE) models and describes CTE implementation in 10 states identified as most similar to California: Texas, Illinois, Florida, New York, Georgia, Tennessee, Michigan, Virginia, Indiana, and Ohio.

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# Executive Summary and Key Findings

## Introduction

In this report, Hanover Research aims to inform the California County Superintendents Educational Services Association (CCSESA) as the Association prepares to make recommendations to state policymakers regarding regional career-technical education (CTE) models. This report proceeds in two sections:

- **Section I: Literature Review** provides an overview of career-technical education (CTE) and describes four widely implemented CTE delivery systems, including career academies, CTE opportunities in traditional high schools, postsecondary partnerships, and industry partnerships. This section concludes with a brief description of CTE-related legislation in California.
- **Section II: State Models** describes CTE in 10 states Hanover Research identified as most similar to California: Texas, Illinois, Florida, New York, Georgia, Tennessee, Michigan, Virginia, Indiana, and Ohio. To the extent possible, these profiles describe CTE funding and performance with regard to state priorities; core indicators; CTE delivery systems; career clusters and programs of study; and postsecondary partnerships.

## Key Findings

- **Large states employ multiple strategies to deliver career-technical education.** The largest states profiled in this report have implemented multiple strategies to support CTE, including career academies, early college high schools, dual enrollment programs, and efforts to support CTE in traditional high schools, such as opportunities to award core academic credit for CTE coursework. Local agencies appear to retain at least some control over the specific CTE implementation models and programs of study available to students.
- **A majority of the states profiled offer CTE career clusters aligned with the National Career Clusters Framework.** The Framework establishes 16 Career Clusters such as Agriculture, Food, and Natural Resources; Education and Training; Health Science; and Marketing. Several states modify the Framework to meet local needs by offering additional career clusters.
- **Many state legislatures have prioritized CTE.** Although some states have struggled to maintain funding levels for secondary and postsecondary CTE, many state legislatures have enacted laws that increase access to CTE or that aim to improve graduation rates for students who pursue CTE pathways. These laws strengthen postsecondary partnerships, increase the number of CTE courses that count toward core graduation requirements, and improve opportunities for students to earn industry-recognized certifications.

- **Effective career-technical education models share several characteristics.** Strategies that blend academics and CTE permit students more opportunities to engage in career development and demonstrate the connection between school and the "real world." Innovative delivery models that increase student engagement and allow students to develop meaningful relationships with mentors also may improve student outcomes. CTE models that include partnerships with postsecondary institutions expose students to college-level work and begin students down a path toward future training.
- Profiled states use several strategies to align secondary CTE with postsecondary programs. **Two common methods of coordinating secondary and postsecondary CTE include Early College High Schools and dual enrollment programs**. Both approaches enable students to earn high school and college credits simultaneously. Articulation agreements with postsecondary institutions also facilitate student transitions.
- **Core indicators included in the Consolidated Annual Reports required by the Perkins Career and Technical Education Act of 2006 represent the metrics most often used to gauge the performance of CTE in individual states**. The core indicators include:
  - Academic Attainment in Reading/Language Arts
  - Academic Attainment in Mathematics
  - Technical Skill Attainment
  - School Completion
  - Student Graduation Rates
  - Placement
  - Nontraditional Participation
  - Nontraditional Completion

# SECTION I: LITERATURE REVIEW

This section provides an overview of career-technical education (CTE) and describes four widely implemented CTE delivery systems, including career academies, CTE opportunities in traditional high schools, postsecondary partnerships, and industry partnerships. This section concludes with a brief description of CTE-related legislation in California.

## OVERVIEW

The Perkins Career and Technical Education Act of 2006 (Perkins Act), which allocates funding for CTE to the states on the condition that they maintain at least one CTE program of study, has driven much of the innovation in CTE in recent years.[1] Programs of study are comprehensive course sequences, including both secondary and postsecondary study, that carry students toward an appropriate, career-oriented achievement such as an industry credential or associate's or bachelor's degree.[2] States typically develop these programs of study in one of three ways:

- At the state level with voluntary local use;
- At the state level with mandatory local use; or
- At the local level with state approval.[3]

As of 2012, around one-quarter of states allowed voluntary local use of state-developed programs of study, and more than half of states conferred state approval on locally developed programs of study. The remaining states have mandated use of state-developed programs of study at the local level.[4]

The White House sought to further enhance the country's career and technical education programs though reauthorization of the Perkins Act in 2012. The administration's proposed blueprint to transform career and technical education hinged on four core principles designed to "usher in a new era of rigorous, relevant, and results-driven" CTE programs, including:

- **Alignment:** CTE programs should effectively align their offerings to "equip students with 21st-century skills and prepare them for in-demand occupations in high growth industry sectors."

[1] "Career, Technical, and Adult Education: Fiscal Year 2015 Request." Department of Education, p. 11. http://www2.ed.gov/about/overview/budget/budget15/justifications/o-ctae.pdf
[2] Ibid.
[3] Taken verbatim from: "A Look Inside: A Synopsis of CTE Trends – Focus: Career Clusters and Programs of Study." National Association of State Directors of Career Technical Education, September 2012, p. 2. http://www.careertech.org/sites/default/files/SynopsisofCTETrends-CareerClusters-2012.pdf
[4] Ibid.

- **Collaboration:** "Strong collaborations among secondary and postsecondary institutions, employers, and industry partners" are essential to CTE programs' success.
- **Accountability:** Programs should be held accountable for improving student outcomes and should implement consistent and clear metrics of student success.
- **Innovation:** Model programs should demonstrate increased focus on creating innovative programs in alignment with state policies and practices.[5]

To achieve these goals, the Office of Vocational and Adult Education (OVAE) has collaborated with major national associations and individual states to create a design framework for effective CTE programs of study. The Office has identified 10 components that work collectively to support successful career and technical education programs, detailed in Figure 1.1.

**Figure 1.1: Components of Effective CTE Programs**

| Component of Success | Evidence of Effective Implementation |
|---|---|
| **Local policies supporting CTE development and implementation** | Policies should include provisions for state and local funding for resources, including professional development and dedicated staff time, along with formal procedures for the design, implementation, and continuous monitoring of the program. Policy language also should ensure CTE opportunities for any secondary student and require secondary students to develop an individual graduation or career plan. |
| **Partnerships among education, business, and other community stakeholders** | Partnerships should be based on clearly written agreements elaborating the roles and responsibilities of each partner. Ongoing analyses of economic and workforce trends should be performed to identify statewide (or regional) programs of study to be created, expanded, or discontinued. Successful partnerships should link to existing initiatives that promote workforce and economic development. |
| **Professional development opportunities for teachers, administrators, and faculty** | These opportunities should support both vertical alignment from high school through postsecondary education and horizontal alignment between the career and technical curriculum and traditional instruction. Professional development programs also should ensure that faculty have adequate content knowledge to effectively deliver the curriculum. |
| **Systems and strategies to gather data on student outcomes and program components** | Data systems are critical to the ongoing success of any CTE program and should include valid and reliable data on student outcomes, administrative record matching of student education and employment data, and systems to collect real-time data to evaluate and improve the program's effectiveness. |
| **Implementation of college and career readiness standards** | These standards define what students are expected to know and be able to do to enter and advance in college and/or careers and comprise the foundation of a program of study. These standards should incorporate essential knowledge and skills (i.e., academic skills, communication, and problem solving), which students must master regardless of their chosen career area. |
| **Course pathways between secondary and postsecondary classes** | Pathways should map out the recommended academic and technical courses in each program of study to ensure that students may transfer to postsecondary education without duplicating classes or requiring remedial coursework. |

[5] "Investing in America's Future: A Blueprint for Transforming Career and Technical Education." U.S. Department of Education, April 2012, p. 2. http://www2.ed.gov/about/offices/list/ovae/pi/cte/transforming-career-technical-education.pdf

| Component of Success | Evidence of Effective Implementation |
|---|---|
| **Credit transfer agreements** | Agreements should allow students to earn postsecondary credit and enable them to seamlessly transfer credits to an institution without completing additional paperwork or petitioning for credit. The system should provide a systematic process for students to transfer credit to any two- or four-year institution in the state. |
| **Guidance counseling and academic advisement services** | To successfully aid students in their academic decisions, counseling systems should offer resources for students to identify their strengths and career interests and choose an appropriate course of study. Counseling services should provide tools to help students learn about postsecondary education and career options and assist students and parents with the logistics of applying for college. |
| **Innovative teaching and learning strategies** | These strategies aim to integrate CTE and academic material in unique and effective ways. Successful strategies employ contextualized work-based, project-based, and problem-based learning approaches and are jointly led by interdisciplinary teaching teams of academic and career and technical teachers. Programs should incorporate team-building, critical thinking, problem-solving, and communication skills, such as through the use of career and technical student organization (CTSO) activities. |
| **Technical skills assessments** | These assessments evaluate students' technical skill levels and should be given at multiple points of the CTE program. Evaluation procedures should include performance-based assessments to the greatest extent possible. |

Source: U.S. Department of Education[6]

The National Dropout Prevention Center/Network (NDPC/N) lists CTE among 15 strategies "that have the most positive impact on the dropout rate," but the NDPC/N makes fewer stipulations about the types of CTE that have the greatest impact on student learning.[7] NDPC/N praises multiple delivery models but generally notes the value of reducing the divide between academic and career skills.[8]

Nationwide, many states have made efforts to blend CTE and academic pursuits to encourage participation in CTE. Indeed, one major obstacle to student participation in CTE is that state graduation requirements often require students to fulfill academic requirements that do not allow time for the completion of CTE courses (which are often classified as electives). For this reason, some states have adjusted graduation requirements to permit students to receive core academic credit for CTE courses that meet certain standards.[9] To reward CTE participation, several states offer special distinctions to high school graduates who engage in a substantial amount of CTE coursework; these distinctions include CTE diplomas, standard diplomas with a CTE distinction, and CTE certificates.[10]

[6] "Career and Technical Programs of Study: A Design Framework." U.S. Department of Education, pp. 2-5. http://cte.ed.gov/file/POS_Framework_Unpacking_1-20-10.pdf

[7] "Effective Strategies for Dropout Prevention." National Dropout Prevention Center/Network. http://www.dropoutprevention.org/effective-strategies#CTE

[8] "Career and Technology Education (CTE)." National Dropout Prevention Center/Network. http://www.dropoutprevention.org/effective-strategies/career-and-technology-education-cte

[9] See: [1] "State Graduation Requirements." Illinois State Board of Education, November 2012, p. 5. http://www.isbe.net/news/pdf/grad_require.pdf

[2] "Professional Development for CTE Courses for Mathematics or Science Credit." Texas Education Agency, August 6, 2012. http://www.tea.state.tx.us/index4.aspx?id=2147508147

[10] Ultsch, A. and C. Imperatore. "State Policies Encourage CTE and Career Readiness." Association for Career and Technical Education, June 3, 2013. https://www.acteonline.org/ctepolicywatch.post.aspx?id=4429&blogid=2289#.VA8d-02YaUk

Overall, efforts to encourage CTE have shown success. In fall 2013, the Association for Career and Technical Education (ACTE) and the National Research Center for College & University Admissions (NRCCUA) conducted a national survey of over 51,000 high school students to ask about students' experience with CTE. One-third of survey respondents indicated that they had an opportunity to earn college credit, a certification, or a degree due to participation in CTE, and two-thirds of survey respondents agreed that the skills they were learning in CTE courses would "help them to get jobs in the future."[11]

States have the opportunity to achieve the positive outcomes of CTE through a number of delivery systems. Most importantly, CTE programs should employ the mechanisms that promote graduation rates. According to ACTE, CTE programs support graduation rates in the following ways:

- By preparing [students] for the postsecondary education and training that will be critical to future economic successes;
- By increasing student engagement;
- By building positive relationships; and
- By providing innovative delivery methods.[12]

Regardless of delivery model, most credit-bearing CTE opportunities operate within the National Career Clusters Framework, which includes 16 Career Clusters and at least 79 Career Pathways, not including additional locally developed pathways.[13] The recognized career clusters include:

- Agriculture, Food, and Natural Resources
- Architecture and Construction
- Arts, A/V Technology and Communications
- Business Management and Administration
- Education and Training
- Finance
- Government and Public Administration
- Health Science
- Hospitality and Tourism

[11] "CTE Works! 2014 Results from a National Survey." Association for Career and Technical Education, p. 3. https://www.acteonline.org/uploadedFiles/Assets_and_Documents/Global/files/CTE_Info/Research/2014_NRCCUA_ACTE_Research_Report_Final.pdf

[12] Slightly adapted from: "Issue Brief: Career and Technical Education's Role in Dropout Prevention and Recovery." Association for Career and Technical Education, June 2007, p. 1. Available from: "What is CTE?" Association for Career and Technical Education. https://www.acteonline.org/general.aspx?id=120#.VAhjf02Yboo

[13] "Career Clusters." National Association of State Directors of Career Technical Education Consortium. http://www.careertech.org/career-clusters

- Human Services
- Information Technology
- Law, Public Safety, Corrections, and Security
- Manufacturing
- Marketing
- Science, Technology, Engineering, and Mathematics
- Transportation, Distribution, and Logistics[14]

## CAREER ACADEMIES

Career academies are school-within-school programs in high schools that offer curricula based around a specific career path or theme. By providing students with employment experience through school-employer partnerships, career academies help at-risk students prepare for post-graduation employment.[15] Initially geared primarily toward students at high risk of dropout, career academies have since broadened their focus to include other students as well.[16]

Most career academies have similar features in that they:

- Operate as "small learning communities" (SLCs) to create a more supportive, personalized learning environment;
- Combine academic and career/technical curricula around a career theme to enrich teaching and learning; and
- Establish partnerships with local employers to provide career awareness and work-based learning opportunities for students.[17]

Career themes used in these academies can include healthcare, finance, technology, communications, public service, or business, among others. Career-related courses are typically taught by a core set of instructors within the academy, while relationships between the academy and local employers can provide students with access to mentors, internship opportunities, and real-world experience in their chosen fields.[18]

The small learning communities emphasized in career academies create a strong sense of support among students and teachers, and research has found that students in career academies in fact do "receive more personal attention and support from teachers,

[14] Ibid.
[15] "What Works Clearinghouse – Career Academies." What Works Clearinghouse, p. 1. http://ies.ed.gov/ncee/wwc/pdf/intervention_reports/WWC_Career_Academies_100506.pdf
[16] Stern, D., C. Dayton, and M. Raby. "Career Academies: A Proven Strategy to Prepare High School Students for College and Careers." Career Academy Support Network and University of California at Berkeley, February 2010, pp. 5-6. http://files.eric.ed.gov/fulltext/ED524061.pdf
[17] Ibid.
[18] "What Works Clearinghouse – Career Academies," Op. cit.

compared to non-academy students"[19] Close relationships with educators, in particular, can be a critical factor in preventing dropouts and increasing graduation rates.[20]

In the largest study of career academies to date, the MDRC, an independent research organization, showed that participation in a career academy may have a slightly positive impact on a variety of academic outcomes, including attendance, earned credits, grade point average, and graduation rates.[21] Perhaps most notably, the MDRC study showed that high-risk students who participated in career academies completed a core academic curriculum at double the rate of their peers, with a 32 percent completion rate among academy students compared to 16 percent for the non-academy comparison group.[22]

The one study that met the evidentiary standards of the What Works Clearinghouse (WWC), an independent reviewer of educational practices, showed that career academies have "a positive and statistically significant effect on dropping out."[23] The study also showed that by graduation, academy students had earned more credits than had non-academy students.[24]

## CTE IN TRADITIONAL HIGH SCHOOLS

While high schools devoted to CTE offer unique opportunities to improve student engagement, traditional high schools may offer students a similar outlet to explore various career paths. Within traditional high school settings, CTE programs are frequently organized into career clusters focusing on a variety of subject areas, particularly those in high economic demand, such as healthcare, advanced manufacturing, and technology.[25] With these recent changes, the technical education system, "once stereotyped as a dumping ground for those less academically-inclined […] has been transforming itself to a system that offers rigorous, relevant, real-world instruction with positive outcomes and impact on student achievement."[26] Figure 1.2 compares the facets of modern CTE programs with those of preexisting vocational education programs.

[19] Stern et al., Op. cit.
[20] Jerald, C. "Keeping kids in school: What research says about preventing dropouts." The Center for Public Education. April 5, 2007. http://www.centerforpubliceducation.org/Main-Menu/Staffingstudents/Keeping-kids-in-school-At-a-glance/Keeping-kids-in-school-Preventing-dropouts.html
[21] Brand, B. "High School Career Academies: A 40-Year Proven Model for Improving College and Career Readiness." National Career Academy Coalition, November 2009, p. 4. http://www.aypf.org/documents/092409CareerAcademiesPolicyPaper.pdf
[22] Ibid.
[23] "What Works Clearinghouse – Career Academies," Op. cit., p. 2.
[24] Ibid., p. 10.
[25] "Investing in America's Future: A Blueprint for Transforming Career and Technical Education," Op. cit., p. 1.
[26] "Already At the Top: CTE Programs Show Positive Impact on Student Achievement." National Association of State Directors of Career Technical Education Consortium, May, 2010, p. 1. http://www.careertech.org/file_download/b0370f91-50ea-483a-a72d-fb8ff3880004

**Figure 1.2: Features of Vocational and Career and Technical Education**

| Program Category | Vocational Education | Career and Technical Education |
|---|---|---|
| **Target Population** | Designed for a few students | Focused on all students |
| **Employment Focus** | Prepares students for a few jobs | Designed for all careers |
| **Programming** | Only for a few program areas | Focused around 16 different career clusters |
| **Academic Integration** | Used in lieu of traditional academics | Aligned with traditional classroom instruction |
| **Education Level** | Focused on high school | Incorporates college partnerships |

Source: Florida Department of Education[27]

The ratio of academic to CTE courses often varies according to a state's graduation requirements or predetermined course sequences established for specific career pathways. Research suggests that the balance of academic and CTE coursework ultimately should emphasize core academic coursework, however. A 2005 report of the National Research Center for Career and Technical Education at the University of Minnesota found that, among students who entered high school on time or at a younger than normal age, a blend of CTE and academic coursework had a positive impact on graduation rates, "but only up to a point."[28] Concentration in CTE "to the exclusion of adequate academic course taking" was found to increase the risk of dropout.[29] The study ultimately recommended that students take one CTE course for every two academic courses.[30]

Career guidance programs allow traditional high schools to enhance CTE to offer some of the benefits found in career academies and comprehensive high schools. As an integrated part of a school's counseling program, career development can help students in a variety of ways. Findings from the University of Massachusetts Amherst's Center for School Counseling Outcome Research and Evaluation (CSCORE), which has conducted several studies of high school counseling practices, illustrate these benefits. CSCORE's research in Nebraska and Utah finds that counseling programs that incorporate "a strong career development component" – for instance, by structuring students' schedules based on specific career goals – are positively related to "beneficial student outcomes including improved attendance, lower disciplinary rates, higher Perkins program completion rates, and increased scores on state achievement tests."[31]

[27] Adapted from: "Best Practices in Career and Technical Education: the School District of Palm Beach County Model." Florida Department of Education, December 9, 2009, p. 8. http://www.palmbeach.k12.fl.us/agenda/Wednesday,%20December%2009,%202009%20Spec%20Mtgs%20and%20Workshops%20re%20%20Academics/4073728B-4CA2-4D7A-90B5-2765C9D0F73B.pdf

[28] Plank, S., S. DeLuca, A. Estacion. "Dropping Out of High School and the Place of Career and Technical Education: A Survival Analysis of Surviving High School." National Research Center for Career and Technical Education, October 2005, p. 25. http://www.nrccte.org/sites/default/files/publication-files/droppingout-plank.pdf

[29] Ibid.

[30] Ibid., p. 26.

[31] Carey, J.C. and K.M. Harrington. "The Impact of School Counseling on Student Educational Outcomes in High Schools: What Can We Learn about Effectiveness from Statewide Evaluations of School Counseling Practice in Nebraska and Utah?" Center for School Counseling Outcome Research and Evaluation, 2010, pp. 3-4. http://www.umass.edu/schoolcounseling/uploads/Research-Brief-8.2.pdf

The College Board similarly has emphasized the need for well-integrated counseling services at the secondary level. In "Eight Components of College and Career Readiness Counseling," the College Board outlines "a comprehensive, systemic approach for school counselors' use to inspire all students to, and prepare them for, college success and opportunity – especially students from underrepresented populations."[32] While the components are geared toward both college and career readiness, they emphasize the benefits of an integrated approach that incorporates and encourages exploration of both career and postsecondary academic options during the high school years.[33]

Finally, some traditional high schools offer students the opportunity to complete CTE coursework at district-run centers focused solely on CTE. In districts supported by CTE centers, students typically complete core academic coursework on their home campus.[34]

## POSTSECONDARY PARTNERSHIPS

Partnerships between secondary schools and postsecondary institutions have long been the basis for initiatives aimed at building seamless pathways for students to journey from secondary education to higher education and into the workforce.[35] Dual enrollment programs, through which high school students may earn college credit at no cost, are among the most widely implemented approaches to CTE that require support from postsecondary institutions. The structure of dual enrollment programs varies widely, and courses may be held "during the school day, evenings, weekends, on or off campus, as a regular college course, or specially adapted to the high school's objectives."[36]

The National Alliance of Concurrent Enrollment Partnerships has established standards to guide the implementation of dual enrollment programs. The standards have earned broad support, particularly in the West and Midwest, although they have not been adopted by California.[37] The standards address five key aspects of dual enrollment programs: curriculum, faculty, students, assessment, and program evaluation.[38]

Like dual enrollment programs established in traditional high schools, early college high schools offer students the opportunity to "simultaneously earn high school and

[32] "Eight Components of College and Career Readiness Counseling," 2010, p. 2. The College Board National Office for School Counselor Advocacy. http://media.collegeboard.com/digitalServices/pdf/nosca/11b_4416_8_Components_WEB_111107.pdf
[33] Ibid.
[34] See: [1] "About Us." Frisco Independent School District. http://schools.friscoisd.org/spc/cte
[2] "Capital Region Career & Technical School." Capital Region Board of Cooperative Educational Services. http://www.capitalregionboces.org/CareerTech/aboutusfaq.cfm
[35] Greenberg, A.R. "School-College Partnerships: Conceptual Models, Programs, and Issues." ERIC Clearinghouse on Higher Education, 1992. http://files.eric.ed.gov/fulltext/ED347956.pdf
[36] Allen, D. "Dual Enrollment: A Comprehensive Literature Review & Bibliography." City University of New York, August 2010, p. 1. http://www.cuny.edu/academics/evaluation/library/DE_LitReview_August2010.pdf
[37] "NACEP in State Policy." National Alliance of Concurrent Enrollment Partnerships. http://www.nacep.org/research-policy/legislation-policy/
[38] "Standards." National Alliance of Concurrent Enrollment Partnerships. http://www.nacep.org/accreditation/standards/

postsecondary credit for the same course while being exposed to the demands of college-level work."[39] These schools are founded "on the principle that academic rigor, combined with the opportunity to save time and money, is a powerful motivator for students to work hard and meet serious intellectual challenges."[40] While the exact structure of early college high schools varies from state to state and school to school, all early college high schools should share the following characteristics:

- Students have the opportunity to earn an Associate's degree or up to two years of transferable college credit while in high school.
- Mastery and competence are rewarded with enrollment in college-level courses and the opportunity to earn two years of college credit for free.
- The years to a postsecondary degree are compressed.
- The middle grades are included in the school, or there is outreach to middle-grade students to promote academic preparation and awareness of the early college high school option.
- Schools provide academic and social supports that help students succeed in a challenging course of study.
- Learning takes place in small learning environments that demand rigorous, high-quality work and provide extensive support.
- The physical transition between high school and college is eliminated—and with it the need to apply for college and for financial aid during the last year of high school. After graduation many students continue to pursue a credential at the partner college.[41]

## INDUSTRY PARTNERSHIPS

Nationwide, industry leaders support districts and schools implementing CTE in a number of ways, often by serving as guest speakers, providing guidance on the development of career-oriented curricula, and offering job shadowing, mentoring, mock interviews, and field trips.[42] Work-based learning programs, which range from single-day job shadowing opportunities to formalized credit-bearing opportunities, provide unique ways for students to engage directly with workers and leaders in the community. A WestEd report that examined opportunities for work-based learning in California recommended combining work-based learning with other approaches that support college and career readiness, including:

[39] "Dual Enrollment/Early College High Schools." National High School Center. http://www.centerii.org/handbook/Resources/4_A_h_Dual_enrollment_early_college_hs.pdf
[40] "Overview & FAQ." Early College Designs. http://www.earlycolleges.org/overview.html#basics1
[41] Taken verbatim from: Ibid.
[42] Jackson, N.M. "Joining Hands: CTE Programs Partner With Employers for Success." *Techniques*, January 2014, p. 19. http://files.eric.ed.gov/fulltext/ED347956.pdf

- **Challenging academics:** A core academic component of college-preparatory instruction in essential subjects, including English, math, science, social studies, foreign language, and visual and performing arts.
- **Technical skills and knowledge:** A demanding technical component, emphasizing the practical application of academic learning and preparing youth for high-skill, high-wage employment.
- **Work-based learning:** A work-based learning component that offers opportunities to learn through real-world experiences, such as internships, apprenticeships and school-based enterprises.
- **Support services:** Supplemental services, such as counseling and additional instruction in reading, writing, and mathematics.[43]

## CALIFORNIA EDUCATION CODE

The California education code includes multiple pieces of state legislation relevant to CTE.[44] In particular, the education code includes rules that pertain to each of the following:

- Collection of CTE-related data (§8006-8008)
- Entities permitted to offer CTE with the supervision of local school districts (§52336-52336.5)
- Contracts between school districts and external CTE providers, such as private businesses and trade and technical schools (§8090-8093)
- District-level CTE advisory committees, which are appointed by each district's governing board and must include representatives of multiple stakeholder groups (§8070)
- Apprenticeship programs, including school attendance requirements, instructional time, and cost allocation (§8150-8155)
- Determination of the need for a greater number of cosmetology programs (§8080-8083)
- Administration of the Career Technical Education Facilities Program, which provides funding to local education agencies to construct or renovate CTE facilities (§17078.70-17078.73)
- Administration of regional occupation centers, which permit students, graduates, and out-of-school youth to enroll in CTE training programs regardless of their county of residence (§52300-52334.5)
- Administration of regional career guidance centers (§52340-52346)[45]

[43] Taken verbatim from: Darche, S., N. Nayar, and K.R. Bracco. "Work Based Learning in California: Opportunities and Models for Expansion," WestEd, 2009, p. 4. http://www.wested.org/online_pubs/workbasedlearning.pdf
[44] "California Education Code." California Legislative Council. http://www.leginfo.ca.gov/cgi-bin/calawquery?codesection=edc
[45] Ibid.

The education code discusses regional occupation centers at length. In general terms, these entities:

- Enable a broader curriculum in technical subjects to be offered, avoid unnecessary duplication of courses and expensive training equipment, and provide a flexibility in operation which will facilitate rapid program adjustments and meeting changing training needs as they arise;
- May achieve great flexibility of planning, scope and operation by the conduct of these programs in a variety of physical facilities at various training locations; and
- Provide career technical and occupational instruction related to the attainment of skills so that trainees are prepared for gainful employment in the area for which training was provided, or are upgraded so they have the higher level skills required because of new and changing technologies or so that they are prepared for enrollment in more advanced training programs.[46]

Likewise, regional career guidance centers "increase the effectiveness of career development programs through the dissemination and implementation of the products, processes, and guidelines established by the California career guidance project."[47] By law, career guidance centers operate in San Diego County and Los Angeles County.[48]

The state legislature also grants power to the California Department of Education (CDE) to establish CTE standards for public schools. The current standards, adopted in 2005, establish learning goals for 58 career pathways associated with 15 industry sectors, including:

- Agriculture and Natural Resources
- Arts, Media, and Entertainment
- Building and Construction Trades
- Business and Finance
- Education, Child Development, and Family Services
- Energy, Environment, and Utilities
- Engineering and Architecture
- Fashion and Interior Design
- Health Science and Medical Technology
- Hospitality, Tourism, and Recreation
- Information and Communication Technologies
- Manufacturing and Product Development
- Marketing Sales and Service
- Public Services
- Transportation[49]

[46] Text adapted from: Education Code Section 52300-52334-.5. California Legislative Council. http://www.leginfo.ca.gov/cgi-bin/displaycode?section=edc&group=52001-53000&file=52300-52334.5
[47] §52340-52346. California Education Code. http://www.leginfo.ca.gov/cgi-bin/displaycode?section=edc&group=52001-53000&file=52340-52346
[48] Ibid.
[49] "CTE Model Curriculum Standards." California Department of Education. http://www.cde.ca.gov/ci/ct/sf/ctemcstandards.asp

For each industry sector, CDE provides a description, knowledge and performance anchor standards (which are common standards established across industry sectors), pathway standards, and a matrix "that displays where natural, obvious academic alignment occurs."[50]

[50] "California Career Technical Education Model Curriculum Standards." California Department of Education, January 2013, p. 13. http://www.cde.ca.gov/ci/ct/sf/documents/ctestdfrontpages.pdf

# SECTION II: STATE MODELS

This subsection describes CTE in 10 states Hanover Research identified as most similar to California: Texas, Illinois, Florida, New York, Georgia, Tennessee, Michigan, Virginia, Indiana, and Ohio. To the extent possible, these profiles describe CTE funding and performance with regard to state priorities; core indicators; CTE delivery systems; career clusters and programs of study; and postsecondary partnerships.

### *METHODOLOGY*

Hanover Research identified a set of prospective peer states on the basis of student population size and composition. Specifically, we calculated the overall difference between California and each of the 50 states and the District of Columbia across the following variables, weighted as indicated:

- Total public school enrollment (elementary and secondary) (weight = 1/2)
- Percentage of the public school student population eligible for free or reduced-price lunches (weight = 1/6)
- Percentage of the student population enrolled in CTE (weight = 1/6)
- Percentage of the postsecondary student population enrolled in public or private not-for-profit two-year or less-than-two-year institutions (weight = 1/6)

After calculating the overall difference scores, we ranked states based on similarity to California (i.e., from most to least similar). Then, to ensure that prospective peer states serve a sufficiently-similar number of students, we eliminated several states near the top of the rankings with total public school enrollments less than 15 percent of the size of California's public school population. These states included: Kentucky (11 percent), New Mexico (5.4 percent), Maryland (13.8 percent), Hawaii (2.9 percent), and Missouri (14.8 percent).

Please note that these profiles also aim to describe the outcomes of state CTE initiatives. The Perkins Act requires all states to report to the federal government on the performance of their CTE programs by submitting a Consolidated Annual Report (CAR).[51] The CAR narrative reports and the core indicator reports each state submits to the U.S. Department of Education are publicly available (the most recent available corresponds to 2011-2012) and provide comparable information regarding the efficacy of the CTE programs in each peer state. The Appendix contains the U.S. Department of Education's recommendations for measuring each core indicator.

[51] "State Profiles: CTE Program Performance Data." Association for Career and Technical Education. https://www.acteonline.org/stateprofiles.aspx

## TEXAS

### *STATE PRIORITIES*

In 2013, Governor Rick Perry signed a number of initiatives related to secondary-level CTE, as shown in Figure 2.1. These laws support development of high school-to-workforce pathways, increase of CTE courses that satisfy graduation requirements, expansion of postsecondary learning opportunities, and introduction of career-related endorsements for various academic paths.

**Figure 2.1: Texas CTE Legislation (2013)**

| LEGISLATION | CONTENTS |
|---|---|
| **S.B. 441** | ▪ Created the Texas Fast Start Program, a workforce readiness initiative aimed to prepare more high school students to quickly enter the workforce through CTE. |
| **H.B. 2201** | ▪ Required the State Board of Education to approve at least six new advanced CTE courses to satisfy a fourth credit in mathematics required for graduation. |
| **H.B. 809** | ▪ Required the state's workforce arm to provide the TEA with "information at least each quarter regarding current and projected employment opportunities in this state." |
| **H.B. 3662** | ▪ Created the Texas Workforce Innovation Needs Program, designed to encourage selected school districts and colleges to work together to design programs aimed to "prepare students for careers for which there is demand in this state." |
| **H.B. 842** | ▪ Allowed schools to offer courses which provide CTE students with college credits while working towards an industry-recognized credential, certificate or associate degree. |
| **H.B. 5** | ▪ Reduced the required number of end-of-course exams from 15 to five and allows incoming high school freshmen to select one of four "endorsement" tracks on which to focus their studies. |

Source: ACTE[52]

### *FUNDING AND PERFORMANCE*

Texas, home to the second-largest school system in the nation, serves a diverse student body and engages a substantial proportion of the student population in CTE. Furthermore, nearly half of the population pursuing postsecondary study has enrolled in a public or private two-year or less-than-two-year institution. In the 2014 fiscal year, the state received over $90 million in Perkins funding, 70 percent of which was distributed on the secondary level. The most recently available data regarding other sources of funding indicates that

[52] Taken verbatim from: "State Profiles," Op. cit.

local funding sources have remained constant while state funding for postsecondary CTE has declined.

Texas does not represent an isolated case in terms of declining state funding for postsecondary CTE. In 2011-2012, state funding for postsecondary CTE declined in 38 percent of states.[53] Figure 2.2 describes student demographics and funding trends for the state.

**Figure 2.2: Texas Demographics, Funding Levels, and Funding Trends**

| TEXAS DEMOGRAPHICS, 2011-2012 | |
|---|---|
| **Public school enrollment** | 5,000,193 |
| **Free or reduced-price lunch eligibility (%)** | 51.1% |
| **CTE enrollment (%)** | 21.5% |
| **Postsecondary students enrolled in public or private not-for-profit two year or less-than-two year institutions (%)*** | 44.7% |
| **PERKINS FUNDING, FY 2014** | |
| **Total Perkins funds received** | $92,014,058 |
| **Percentage distributed to secondary** | 70% |
| **Percentage distributed to postsecondary** | 30% |
| **NON-PERKINS FUNDING, 2011-2012** | |
| **State secondary funding** | Maintained |
| **State postsecondary funding** | Decreased |
| **Local secondary funding** | Maintained |
| **Local postsecondary funding** | Maintained |

*Fall 2012
Sources: National Center for Education Statistics and U.S. Department of Education[54]
National Association of State Directors of Career Technical Education Consortium[55]

In 2011-2012, the most recent year for which performance indicator data are available, Texas met performance targets associated with seven of the eight indicators that the Perkins Act requires states to track. With regard to technical skill attainment, the state exceeded the target goal by a substantial margin. The state initially set a goal of 60 percent of CTE concentrators who take an industry-aligned assessment to earn a passing score; by the end of the academic year, over 77 percent of CTE students who took an industry-aligned assessment earned a passing score.

[53] "A Look Inside: A Synopsis of CTE Trends – Focus: Funding." National Association of State Directors of Career Technical Education, February 2013, p. 2. http://careertech.org/sites/default/files/SynopsisofCTETrends-Funding-2012.pdf
[54] [1] Elementary/Secondary Information System. National Center for Education Statistics. http://nces.ed.gov/ccd/elsi/expressTables.aspx
[2] Integrated Postsecondary Education Data System. National Center for Education Statistics. http://nces.ed.gov/ipeds/datacenter/
[3] "Generate Enrollment (CTE Participants) Report." U.S. Department of Education, Office of Career, Technical and Adult Education. http://cte.ed.gov/accountability/reports/report_enroll_2005a.cfm?p=4&e=p
[55] "CTE in Your State: Texas." National Association of State Directors of Career Technical Education Consortium. http://www.careertech.org/cte-your-state

The state fell short with regard to placement, defined as the percentage of CTE students who achieve enrollment in postsecondary education or advanced training, military enlistment, or employment by "the second quarter following the program year in which they left secondary education." Slightly over 70 percent of CTE students achieved one of the previously mentioned placements, a placement rate 4.87 percentage points below the performance target of 75 percent. Figure 2.3 describes state performance for each core indicator.

**Figure 2.3: Texas Core Indicator Performance (2010-2011)[56]**

| Core Indicator | Performance Target | Actual Performance | Performance relative to target |
|---|---|---|---|
| **Academic Attainment in Reading/Language Arts** | 95.0% | 97.21% | +2.21% |
| **Academic Attainment in Mathematics** | 95.0% | 95.77% | +0.77% |
| **Technical Skill Attainment** | 60.0% | 77.22% | +17.22% |
| **School Completion** | 95.0% | 96.39% | +1.39% |
| **Student Graduation Rates** | 90.01% | 95.91% | +5.90% |
| **Placement** | 75.0% | 70.13% | -4.87% |
| **Nontraditional Participation** | 40.8% | 42.74% | +1.94% |
| **Nontraditional Completion** | 39.75% | 41.33% | +1.58% |

Source: Texas Education Agency[57]

### *Delivery Systems*

Texas primarily relies on comprehensive high schools to deliver CTE. The state's comprehensive high schools include:

- **Magnet schools,** which offer specialized curriculum that fully integrates core academic instruction with specific career training;
- **Career academies within comprehensive high schools,** which are small, personalized learning communities that contextualize academic instruction with specific career training; and
- **Stand-alone career academies,** which are career academies that function independent of a comprehensive high school.[58]

The College & Career Academy Support Network (CCASN) lists 52 career academies that operate in the state.[59] Some CTE courses offered by public schools in the state carry mathematics or science credits, and teachers for those courses are required to attend state-sponsored training. These courses include:

[56] The most recently available CAR report for Texas provides data from the 2010-2011 academic year, rather than from the 2011-2012 academic year.
[57] "Texas Consolidated Annual Report for Fiscal Year 2011-2012 under the Carl D. Perkins Career and Technical Education Improvement Act of 2006." Texas Education Agency, December 2012, pp. 12-14. http://cte.ed.gov/Docs/CARNarrative/TX_narrative_2011-2012.pdf
[58] Taken verbatim from: "State Profiles." Association for Career and Technical Education. https://www.acteonline.org/stateprofiles/
[59] "Academies Nationwide." College &Career Academy Support Network. http://casn.berkeley.edu/directories.php?us=1

- Advanced Animal Science
- Advanced Biotechnology
- Advanced Plant and Soil Science
- Engineering Mathematics
- Engineering Design and Problem Solving
- Food Science
- Forensic Science
- Mathematical Applications in Agriculture, Food, and Natural Resources
- Statistics and Risk Management[60]

The state's stand-alone career academies "are generally defined as a separate school or school within a school with an educational program that is based on one or more occupational themes."[61] Thus, within this structure, stand-alone career academies would operate as independent schools under the purview of district administration. For example, Texas Science, Technology, Engineering, and Mathematics (T-STEM) academies operate as independent high schools "focusing on improving instruction and academic performance in science and mathematics-related subjects and increasing the number of students who study and enter STEM careers."[62] Initially, all T-STEM academies were funded through a grant administered by the Texas Education Agency or a private partner engaged in the Texas High School Project. As of the 2011-2012 academic year, campuses relying on local or other sources of funding may implement the T-STEM Academy model and, upon approval, become eligible for state-funded professional development and technical assistance.[63]

### *Career Clusters and Programs of Study*

CTE in Texas is largely guided by the AchieveTexas College and Career Initiative, which relies on the National Career Clusters Framework to structure CTE around the 16 career clusters.[64] Texas administrative code requires districts to offer programs of study from at least three CTE clusters or contract with other organizations or institutions to ensure student access to CTE.[65]

In total, public schools in the state offer over 120 programs of study across the 16 career clusters.[66] Each program of study includes an academic core curriculum (four courses each in English language arts, mathematics, science, and social studies) "that is enhanced with relevant CTE career-related courses."[67] The choice to implement any one career cluster or associated program of study is made locally by school boards, superintendents, or

[60] "Professional Development for CTE Courses for Mathematics or Science Credit," Op. cit.
[61] Patterson, C. "Career and Technology Education: Many Paths, Equal Rigor and One Destination for Texas High Schools." Texas Institute for Education Reform, September 2008, p. 11. http://www.senate.state.tx.us/75r/senate/commit/c530/handouts08/1020-Andrew-Erben.pdf
[62] "Texas Science, Technology, Engineering and Mathematics Initiative." Texas Education Agency. http://www.tea.state.tx.us/index3.aspx?id=4470
[63] Ibid.
[64] "What is the AchieveTexas College and Career Initiative?" AchieveTexas. http://www.achievetexas.org/
[65] "Frequently Asked Questions and Answers about AchieveTexas." AchieveTexas. http://www.achievetexas.org/Questions1.htm
[66] "CTE in Your State," Op. cit.
[67] "State Profiles," Op. cit.

committees, or other decision-making structures that operate within a community.[68] Programs are ultimately approved by the state education agency.[69]

### *POSTSECONDARY PARTNERSHIPS*

All Texas school districts are required to provide students with the opportunity to earn at least 12 college credits through dual enrollment or Advanced Placement (or an equivalent program).[70] Additional funding for dual enrollment is available through the Advanced Technical Credit Grant Program, which provides funding for students pursuing dual enrollment to earn CTE credits.[71]

Jobs for the Future (JFF), a nonprofit organization that advocates for workforce development, lists 46 early college high schools that operate in the state.[72] High schools also may award college credits to CTE students working toward an industry-recognized credential, certificate, or associate's degree. [73]

## ILLINOIS

### *STATE PRIORITIES*

In 2012, Illinois joined the Pathways to Prosperity initiative—a six-state coalition "that aims to increase the number of high school graduates who attain a postsecondary credential with value in the labor market while also leaving open the prospect of further education."[74] To that end, the state legislature has invested in the construction of a culinary arts training facility, eliminated certification obstacles for educators seeking a license with a CTE endorsement, and permitted AP coursework in computer science to substitute for part of the graduation requirement in mathematics.[75] With the support of the Pathways to Prosperity network, the state will continue to pursue innovative approaches to growing the number of CTE-credentialed graduates.[76]

[68] "Frequently Asked Questions and Answers about AchieveTexas," Op. cit.
[69] "State Profiles," Op. cit.
[70] Ibid.
[71] "Request for Application # 701-12-104 2012–2013 Advanced Technical Credit Grant Program." Texas Education Agency, May 7, 2012. http://www.tea.state.tx.us/index4.aspx?id=2147506546&ekfxmen_noscript=1&ekfxmensel=e9f6cb525_620_634
[72] "Reinventing High Schools for Postsecondary Success." Jobs for the Future. http://www.jff.org/initiatives/early-college-designs/schools
[73] "State Profiles," Op. cit.
[74] "Illinois Will Create New 'Pathways to Prosperity' for High School Students." Illinois State Board of Education, June 19, 2012. http://www.isbe.net/news/2012/jun19a.htm
[75] "State Profiles," Op. cit.
[76] "Illinois Will Create New 'Pathways to Prosperity' for High School Students," Op. cit.

### *Funding and Performance*

Illinois serves a population of over 2 million students, nearly half of whom are eligible for free or reduced-price lunches, and a large community college population. In 2014, the state received over $40 million in Perkins funding, of which 60 percent was allocated to secondary education (Figure 2.4).

**Figure 2.4: Illinois Demographics and Funding Levels**

| Illinois Demographics, 2011-2012 | |
|---|---|
| **Public school enrollment** | 2,073,721 |
| **Free or reduced-price lunch eligibility (%)** | 48.9% |
| **CTE enrollment (%)** | 14.5% |
| **Postsecondary students enrolled in public or private not-for-profit two-year or less-than-two-year institutions (%)*** | 40.6% |
| **Perkins Funding, FY 2014** | |
| **Total Perkins funds received** | $40,519,069 |
| **Percentage distributed to secondary** | 60.0% |
| **Percentage distributed to postsecondary** | 40.0% |
| **Non-Perkins Funding, 2011-2012** | |
| **State secondary funding** | -- |
| **State postsecondary funding** | -- |
| **Local secondary funding** | -- |
| **Local postsecondary funding** | -- |

*Fall 2012 --Data unavailable
Sources: National Center for Education Statistics and U.S. Department of Education[77]
National Association of State Directors of Career Technical Education Consortium[78]

Illinois reports the proportion of eligible recipients for Perkins funding that meet established performance targets. Eligible recipients may include local education agencies, CTE schools, educational service agencies, consortia, and postsecondary institutions.[79]According to the most recently available Illinois CAR report, the state "met at least 90 percent of all of the required postsecondary and secondary state Annual Adjusted Levels of Performance."[80] Although the state met performance targets for each indicator, not all eligible recipients in the state met the performance target benchmark. Figure 2.5 lists the proportion of eligible recipients who did not meet at least 90 percent of the performance benchmark.[81]

[77] [1] Elementary/Secondary Information System, Op. cit.
[2] Integrated Postsecondary Education Data System, Op. cit.
[3] "Generate Enrollment (CTE Participants) Report," Op. cit.
[78] "CTE in Your State," Op. cit.
[79] Section 3(14). Carl D. Perkins Vocational and Technical Education Act. http://www.gpo.gov/fdsys/pkg/BILLS-109s250enr/pdf/BILLS-109s250enr.pdf
[80] "Part B: Narrative Performance Information." Illinois State Board of Education," December 2012, p. 14. http://cte.ed.gov/Docs/CARNarrative/IL_narrative_2011-2012.pdf
[81] Ibid., p. 15.

**Figure 2.5: Illinois Core Indicator Performance (2011-2012)**

| Core Indicator | Target Met | Performance Target | % Eligible Recipients Not Meeting Target |
|---|---|---|---|
| **Academic Attainment in Reading/Language Arts** | Yes | 40.46% | 7.14% |
| **Academic Attainment in Mathematics** | Yes | 40.20% | 7.14% |
| **Technical Skill Attainment** | Yes | 50.00% | 1.79% |
| **School Completion** | Yes | 95.00% | 3.57% |
| **Student Graduation Rates** | Yes | 95.00% | 3.57% |
| **Placement** | Yes | 45.00% | 15.10% |
| **Nontraditional Participation** | Yes | 16.50% | 0.00% |
| **Nontraditional Completion** | Yes | 14.00% | 0.00% |

Sources: National Association of State Directors of Career Technical Education Consortium[82]
Illinois State Board of Education[83]

### *Delivery Systems*

Illinois supports multiple CTE delivery systems, including:

- Comprehensive high schools;
- CTE-focused secondary schools, which are schools that focus secondary academics around specific careers; and
- Area career centers, which provide supplementary career training to area high school students and adult learners.[84]

CCASN lists 27 career academies operated in the state.[85] All high schools may award core academic credit to students who complete a CTE course that addresses "at least 50 percent of the content of the required course or graduation requirement for which it is substituted."[86] To support blended academic and CTE coursework, Illinois participates in the Southern Regional Education Board's (SREB) High Schools That Work initiative, which supports high schools in combining "challenging academic courses and modern Career and Technical Education courses to raise the achievement of high school students."[87]

As of March 2014, 24 area career or vocational centers operate in Illinois.[88] Area career and vocational centers are associated with specific school districts, and all students training in these centers must register through the school district in which they reside.[89] In addition, all

[82] "CTE in Your State," Op. cit.
[83] "Part B: Narrative Performance Information." Illinois State Board of Education, Op. cit.
[84] Taken verbatim from: "State Profiles," Op. cit.
[85] "Academies Nationwide," Op. cit.
[86] "State Graduation Requirements," Op. cit.
[87] "High Schools That Work." Illinois State Board of Education. http://www.isbe.state.il.us/career/html/hstw.htm
[88] "Area Career Centers (AAC) and Area Vocational Centers (AVC)." Illinois State Board of Education, March 2014. http://www.isbe.net/career/pdf/il-acc-avc.pdf
[89] "SDLC Meeting." Illinois State Board of Education, April 2012, p. 15. http://www.isbe.state.il.us/career/ppt/sdlc_pres_20120404.pdf

area career centers are part of regional Education for Employment (EFE) systems.[90] These operate as regional CTE delivery systems that function within the same regulations that apply to public schools under the guidance of a governing board led by local superintendents.[91]

### *CAREER CLUSTERS AND PROGRAMS OF STUDY*

Illinois relies on the National Career Clusters Framework to support CTE in five career areas: business, marketing, and computer education; technology and engineering education; family and consumer sciences; health sciences technology; and agricultural education.[92] Programs of study, which may be developed locally, must begin by Grade 9 and last through at least two years of higher education.[93] The state also operates a grant-funded continuous improvement initiative, Pathways to Results, designed to improve career education and programs of study. Specifically, the initiative aims to:

- Develop and refine programs of study and supporting processes to improve the career pathways that lead students to employment.
- Develop and implement an inquiry-based, equity-guided process to improve programs and enhance access and equitable outcomes for diverse learners.
- Improve transition outcomes for underserved students, including groups of students who are racially and ethnically diverse, low income, low literacy, and first-generation college.
- Improve access of local teams to data and tools to support continuous improvement and student outcomes.[94]

### *POSTSECONDARY PARTNERSHIPS*

Articulation agreements implemented by Illinois' Education for Employment Regional Delivery Systems, local high schools, and postsecondary institutions "assist with facilitating program alignment; student transition, shared facilities, equipment and staff; and cooperative program planning and evaluation."[95] JFF lists eight early college high schools that operate in the state.[96]

In addition to the partnerships listed above, the Illinois State Board of Education has partnered with the University of Illinois and the Illinois Department of Commerce and

[90] "2013 Career and Technical Education Report." Illinois State Board of Education, February 24, 2014, p. 4. http://www.isbe.net/reports/cte_ed_rpt13.pdf
[91] "Welcome Back!" Education for Employment System #330. http://www.efe330.org/
[92] Career Cluster Framework. Illinois Community College Board. http://iccbdbsrv.iccb.org/programsofstudy/images/ClusterModel.jpg
[93] "State Profiles," Op. cit.
[94] Taken verbatim from: "Pathways to Results." University of Illinois College of Education, May 22, 2014. http://occrl.illinois.edu/files/profiles/Pathways%20Profile.pdf
[95] "State Profiles," Op. cit.
[96] "Reinventing High Schools for Postsecondary Success," Op. cit.

Economic Opportunity to form a state chapter of Project Lead the Way, a national initiative that promotes a STEM curriculum in K-12 settings.[97]

## FLORIDA

### *STATE PRIORITIES*

Florida prioritizes CTE funding for districts that serve students below the poverty line. The state-to-local funding formula for secondary CTE programs allocates funding in the following proportions:

- Thirty percent allocated to local educational agencies (LEAs) based on the number of 5- to 17-year olds who reside in the school district.
- Seventy percent allocated to LEAs based on the number of 5 to 17-year olds in districts below the poverty line, based on data collected under ESEA.[98]

Between 2013 and 2014, the state legislature passed multiple laws pertaining to CTE, as described in Figure 2.6. These laws strengthen opportunities for students to earn industry certifications, expand dual enrollment, increase the number of CTE courses that can fulfill graduation requirements, and broaden CTE instruction.

**Figure 2.6: Florida CTE Legislation (2013-2014)**

| LEGISLATION | CONTENTS |
|---|---|
| **S.B. 850** | ■ Requiring a district school board, in consultation with the superintendent, to make CAPE Digital Tool certificates and CAPE industry certifications available to students, including students with disabilities, in preK-12<br>■ Requiring district boards to tell parents of students earning industry certifications that articulates for postsecondary credit about estimated cost savings<br>■ Requiring the state Department of Education to shore ROI on industry-certified career education programs and career-themed courses in its annual report |
| **H.B. 487** | ■ Requires the Department of Agriculture and Consumer Services to annually provide farm occupation industry certification lists and requires rules for implementing industry certification processes for farm occupations. |
| **H.B. 7031** | ■ Allows students starting in grade 6 to participate in dual enrollment programs. |
| **H.B. 5101** | ■ Enables computer science courses to fulfill high school graduation requirements. |

[97] [1] Home page. Illinois Project Lead the Way. http://www.pltw.uillinois.edu/
[2] Home page. Project Lead the Way. https://www.pltw.org/
[98] Taken nearly verbatim from: "Implementation Guide (2013-2014 Edition)." Florida Department of Education, p. 13. http://www.fldoe.org/workforce/perkins/pdf/2013-2014RFA.pdf

| LEGISLATION | CONTENTS |
|---|---|
| **S.B. 1076** | ■ Creating a pathway to a diploma meaningful for students going on to college or a career by demonstrating the skills required for high school graduation, including earning national industry certifications<br>■ Requiring financial literacy to be taught in schools<br>■ Giving bonuses to teachers that provide direct instruction toward the attainment of industry certifications<br>■ Directing the Board of Governors and the State Board of Education to create metrics that let Floridians know how well state universities and colleges are doing |

Source: ACTE[99]

### *FUNDING AND PERFORMANCE*

Florida public schools serve over 2.6 million students, over half of whom are eligible for free or reduced-price lunches. Nearly 13 percent of Florida students are enrolled in CTE, although postsecondary enrollment in public or private not-for-profit two-year or less-than-two-year institutions is proportionally smaller than that of states of comparable size. In 2014, the state received over $61 million in Perkins funding, with a slightly greater percentage of that funding allocated to postsecondary institutions. In 2011-2012, state and local funding for secondary CTE remained steady, while state funding for postsecondary institutions decreased and local funding for postsecondary institutions increased.

**Figure 2.7: Florida Demographics, Funding Levels, and Funding Trends**

| FLORIDA DEMOGRAPHICS, 2011-2012 | |
|---|---|
| **Public school enrollment** | 2,668,113 |
| **Free or reduced-price lunch eligibility (%)** | 57.6% |
| **CTE enrollment (%)** | 12.8% |
| **Postsecondary students enrolled in public or private not-for-profit two-year or less-than-two year institutions (%)*** | 7.0% |
| **PERKINS FUNDING, FY 2014** | |
| **Total Perkins funds received** | $61,726,876 |
| **Percentage distributed to secondary** | 48% |
| **Percentage distributed to postsecondary** | 52% |
| **NON-PERKINS FUNDING, 2011-2012** | |
| **State secondary funding** | Maintained |
| **State postsecondary funding** | Decreased |
| **Local secondary funding** | Maintained |
| **Local postsecondary funding** | Increased |

*Fall 2012
Sources: National Center for Education Statistics and U.S. Department of Education[100]
National Association of State Directors of Career Technical Education Consortium[101]

[99] "State Profiles," Op. cit.
[100] [1] Elementary/Secondary Information System, Op. cit.
[2] Integrated Postsecondary Education Data System, Op. cit.
[3] "Generate Enrollment (CTE Participants) Report," Op. cit.
[101] "CTE in Your State," Op. cit.

In 2011-2012, Florida met targets established for all secondary-level core indicators.[102] Figure 2.8 shows actual statewide performance relative to each core indicator. The state's performance appeared weakest with respect to nontraditional participation and academic attainment in reading/language arts.

**Figure 2.8: Florida Core Indicator Performance (2011-2012)**

| Core Indicator | Target Met | Actual Performance |
|---|---|---|
| **Academic Attainment in Reading/Language Arts** | Yes | 66.3% |
| **Academic Attainment in Mathematics** | Yes | 88.4% |
| **Technical Skill Attainment** | Yes | 85.6% |
| **School Completion** | Yes | --[103] |
| **Student Graduation Rates** | Yes | 92.4% |
| **Placement** | Yes | 80.3% |
| **Nontraditional Participation** | Yes | 39.1% |
| **Nontraditional Completion** | Yes | >95.0% |

--Data unavailable
Sources: National Association of State Directors of Career Technical Education Consortium [104]
U.S. Department of Education[105]

### *Delivery Systems*

Florida offers secondary-level CTE through three primary outlets:

- Comprehensive high schools, many of which include career academies;
- Area vocational-technical centers, which are CTE schools that serve an entire school district; and
- University developmental research schools.[106]

The state focuses heavily on career academies for CTE delivery; in 2009-2010, Florida's 67 school districts operated a combined 838 academies. Furthermore, a review of the state's career academies revealed that the most frequently offered pathways related to arts, A/V technology, and communication.[107]

[102] Ibid.
[103] For females, a school completion rate of ">95" percent is reported, with no underlying data provided to calculate a more specific percentage. For males, the school completion rate equals 94.8 percent.
[104] Ibid.
[105] [1] Note: This source presents actual performance data disaggregated by demographic group. To determine overall performance across demographic groups, this table presents combined data for females and males.
[2] Florida Accountability Report. 2011-2012. U.S. Department of Education. http://cte.ed.gov/accountability/reports/report_Acct2_piv.cfm?state=FL&year=2011-2012
[106] Taken nearly verbatim from: "State Profiles," Op. cit.
[107] "Career and Professional Academy Enrollment and Performance Report, 2009-10." Florida Department of Education, p. 1. http://www.fldoe.org/workforce/pdf/capepr0910.pdf

University developmental research schools offer CTE within a comprehensive curriculum. The schools may enroll students in all grades and serve as outlets for educational research and innovation in policy and educational practice.[108]

### *Career Clusters and Programs of Study*

Florida relies on the National Career Clusters Framework and has implemented an additional career cluster focused on Energy.[109] The state provides sample programs of study for each of the 17 career clusters, but notes that students may pursue alternate pathways toward completing a program of study depending on course availability.[110] The Workforce Education Division of the Florida Department of Education approves all secondary-level CTE programs.[111]

As noted at the beginning of this profile, Florida has invested heavily in programs of study that culminate in industry certifications. Legislation passed in 2011 requires all districts to offer a minimum of two "career-themed courses," defined as a course or series of courses that culminates in an industry certification.[112] As of 2013, students may complete CTE coursework in place of algebra II, chemistry, and physics courses.[113]

### *Postsecondary Partnerships*

The 2011-2012 Florida CAR narrative report describes the state's goal of "seamless articulation and maximum access" for the public K-20 system. To this end, the state has implemented a model that aligns academic standards across the K-20 system and permits high school students to earn college credit transferrable to postsecondary institutions. More than 50,000 Florida students in Grades 6 through 12 participate in the state's dual enrollment program each year.[114] As of 2013, state law requires school districts to pay the costs of courses taken through dual enrollment.[115]

[108] "'Florida High' Ranked Among Nation's Best High Schools." WCTV, May 22, 2013. http://www.wctv.tv/home/headlines/Florida-High-Ranked-Among-NationS-Best-High-Schools-208495411.html
[109] "State Profiles," Op. cit.
[110] "Perkins IV Resources." Florida Department of Education. http://www.fldoe.org/workforce/perkins/perkins_resources.asp
[111] "State Profiles," Op. cit.
[112] Ibid.
[113] Ibid.
[114] "Dual Enrollment." Florida Department of Education, pp. 1-2. http://www.fldoe.org/articulation/pdf/DualEnrollmentFAQ.pdf
[115] "State Profiles," Op. cit.

## NEW YORK

### *STATE PRIORITIES*

Despite relying heavily on industry partnerships to strengthen secondary-level CTE, New York remains committed to increasing postsecondary matriculation for all student populations. For instance, the state's most recent high-profile CTE initiative, P-TECH, is a public-private partnership through which students "will earn an associate degree at no cost to their families and will be first in line for jobs with participating companies when they graduate."[116] The program is founded on strengthening relationships among secondary schools, postsecondary schools, and industry to improve career-related outcomes.[117]

### *FUNDING AND PERFORMANCE*

New York serves a public school population of over 2.7 million students, nearly half of whom are eligible for free or reduced-price lunches. While the state's CTE enrollment is somewhat smaller than that of other states, over one-quarter of students pursuing postsecondary education in the state are enrolled in community colleges. In 2014, Perkins funding for the state, distributed almost equally between secondary schools and postsecondary institutions, exceeded $51 million. Local CTE funding for secondary schools decreased in 2011-2012 (Figure 2.9).

**Figure 2.9: New York Demographics, Funding Levels, and Funding Trends**

| NEW YORK DEMOGRAPHICS, 2011-2012 | |
|---|---|
| **Public school enrollment** | 2,702,568 |
| **Free or reduced-price lunch eligibility (%)** | 49.4% |
| **CTE enrollment (%)** | 6.1% |
| **Postsecondary students enrolled in public or private not-for-profit two year or less-than-two year institutions (%)*** | 25.4% |
| **PERKINS FUNDING, FY 2014** | |
| **Total Perkins funds received** | $51,368,505 |
| **Percentage distributed to secondary** | 52.0% |
| **Percentage distributed to postsecondary** | 48.0% |
| **NON-PERKINS FUNDING, 2011-2012** | |
| **State secondary funding** | -- |
| **State postsecondary funding** | -- |
| **Local secondary funding** | Decreased |
| **Local postsecondary funding** | Decreased |

*Fall 2012 --Data unavailable
Sources: National Center for Education Statistics and U.S. Department of Education[118]
National Association of State Directors of Career Technical Education Consortium[119]

[116] "Governor Cuomo Announces Public-Private Partnerships to Prepare More Than 6,000 Students for High-Skill Jobs." New York State Governor's Office, August 28, 2013. http://www.governor.ny.gov/press/08282013Students-for-High-Skill-Jobs
[117] "Welcome to P-TECH!" Pathways in Technology Early College High School. http://www.ptechnyc.org/site/default.aspx?PageID=1
[118] [1] Elementary/Secondary Information System, Op. cit.
[2] Integrated Postsecondary Education Data System, Op. cit.
[3] "Generate Enrollment (CTE Participants) Report," Op. cit.

In 2011-2012, New York met all targets for core indicators. Figure 2.10 lists actual performance for each core indicator. All percentages represent the proportion of CTE students who achieved goals associated with each indicator.

**Figure 2.10: New York Core Indicator Performance (2011-2012)**

| Core Indicator | Target Met | Actual Performance |
|---|---|---|
| **Academic Attainment in Reading/Language Arts** | Yes | 96.01% |
| **Academic Attainment in Mathematics** | Yes | 94.91% |
| **Technical Skill Attainment** | Yes | 75.15% |
| **School Completion** | Yes | 92.29% |
| **Student Graduation Rates** | Yes | 84.24% |
| **Placement** | Yes | 86.30% |
| **Nontraditional Participation** | Yes | 36.65% |
| **Nontraditional Completion** | Yes | 34.84% |

Sources: National Association of State Directors of Career Technical Education Consortium[120]
New York State Education Department[121]

### *Delivery Systems*

New York relies on 1,100 CTE providers that work with school districts, boards of cooperative educational services (BOCES), and postsecondary institutions.[122] These state-approved CTE programs provide students with the opportunity to earn at least 3.5 credits "in focused and rigorous courses that form a cohesive concentration."[123] Delivery is also supported by the CTE Technical Assistance Center of NY, tasked by the New York State Education Department (NYSED) "in carrying out its mission of improving the quality, access, and delivery of CTE through research-based methods and strategies resulting in broader Career and Technical Education (CTE) opportunities for all students."[124] Specific goals of the Center are to:

- Improve career and technical education data collection to create an accurate picture of CTE program performance,
- Assist schools in the integration of the new common core academic standards with CTE,
- Expand CTE program approvals,
- Use best practices in CTE for high school improvement,

[119] "CTE in Your State," Op. cit.
[120] Ibid.
[121] "Part B: Narrative Performance Information." New York State Education Department, March 14, 2013, p. 26. http://cte.ed.gov/Docs/CARNarrative/NY_narrative_2011-2012.pdf
[122] "Advancing New York State Career & Technical Education: Quality, Access, Delivery." New York State Education Department. http://www.p12.nysed.gov/cte/
[123] "Introduction to Program Approval." CTE Technical Assistance Center of NY. http://www.nyctecenter.org/spn/page/139
[124] "About the Career and Technical Education Technical Assistance Center." CTE Technical Assistance Center of NY. http://www.nyctecenter.org/spn/page/1

- Expand CTE programs and student leadership participation, and
- Build relationships and networks to strengthen CTE.[125]

The CTE Technical Assistance Center of NY operates through a contract with NYSED. The center is engaged in a contract originally awarded in December 2010 and made possible through federal Perkins funding.[126] Through the contract, the center directly serves NYSED, intermediate districts, local districts, and "the schools and programs of highest need as determined by NYSED."[127] In broad terms, the goals of the center pertain to:

- CTE data collection and communication;
- Networking to strengthen CTE;
- Integration of the Common Core State Standards;
- CTE program and student leadership expansion;
- CTE program approval process; and
- Best practices in CTE.[128]

CCASN lists 72 career academies operating in the state.[129]

### *Career Clusters and Programs of Study*

In New York, CTE providers offer courses in six career clusters:

- Agricultural education
- Business and marketing education
- Family and consumer sciences education
- Health occupations education
- Technology education
- Trade, technical and industrial education[130]

Local applicants for Perkins funding are responsible for developing programs of study. In the process of developing programs of study, CTE providers conduct a self-study to ensure adherence with all policies and regulations. External review teams also assess locally established programs of study to identify program needs. Following the self-study and external review, programs of study are reviewed for approval from the New York State Education Department.[131]

[125] Taken verbatim from: Ibid.
[126] "Challenges to CTE Programming Success in New York State." CTE Technical Assistance Center of New York, March 2012. http://www.nyctecenter.org/spn/media/files/articles/research/CTEChallengesWP3.19.12.doc
[127] "About the Career and Technical Education Technical Assistance Center," Op. cit.
[128] Taken verbatim from: "Challenges to CTE Programming Success in New York State," Op. cit.
[129] "Academies Nationwide," Op. cit.
[130] "Advancing New York State Career & Technical Education: Quality, Access, Delivery," Op. cit.
[131] "Implementation Guide." New York State Education Department. http://www.p12.nysed.gov/cte/ctepolicy/guide.html

### *Postsecondary Partnerships*

To receive state approval, CTE programs must offer "an articulation to a postsecondary learning experience."[132] Articulation agreements between CTE programs and postsecondary institutions may offer students a range of benefits, including priority admission, advanced standing for credits earned in the CTE program, discounted tuition rates, and opportunities to earn college credit.[133]

New York's Smart Scholars Early College High School Program facilitates partnerships between school districts and postsecondary institutions. These early college high schools offer an accelerated high school curriculum and the opportunity to earn 20 to 60 transferable college credits. The program targets students who are "traditionally underrepresented in postsecondary education."[134] JFF lists 12 early college high schools operating in the state.[135]

## Georgia

### *State Priorities*

Georgia leaders reportedly have struggled to maintain funding levels for CTE for the last decade, despite the efforts of CTE advocates to educate legislators about the importance of CTE and build industry partnerships to further strengthen the volume of CTE supporters.[136] The decline in CTE spending, however, may reflect a broader decrease in education spending overall. Between fiscal years 2008 and 2013, state education spending fell by an inflation-adjusted 14.8 percent ($690) per student.[137]

### *Funding and Performance*

Georgia enrolls over 1.6 million students in public schools, and nearly 60 percent of those students are eligible for free or reduced-price lunches. Over 18 percent of Georgia students are enrolled in CTE, and nearly 27 percent of the state's postsecondary students attend public or private not-for-profit two-year or less-than-two-year institutions. In 2014, Georgia received over $38 million in Perkins funding, distributed equally to secondary and postsecondary CTE. In 2011-2012, state and local funding for secondary and postsecondary CTE decreased (Figure 2.11).

[132] "State Profiles," Op. cit.
[133] Ibid.
[134] "Smart Scholars Early College High School (ECHS) Program." New York State Education Department. http://www.highered.nysed.gov/kiap/SmartScholarsEarlyCollegeHighSchool_000.htm
[135] "Reinventing High Schools for Postsecondary Success," Op. cit.
[136] "Advocacy Examples." Association for Career and Technical Education. http://www.acteonline.org/general.aspx?id=657#.VFPjRk2YYy8
[137] Oliff, P., C. Mai, and M. Leachman. "New School Year Brings More Cuts in State Funding for Schools." Center on Budget and Policy Priorities, September 4, 2012. http://www.cbpp.org/cms/?fa=view&id=3825

**Figure 2.11: Georgia Demographics, Funding Levels, and Funding Trends**

| Georgia Demographics, 2011-2012 | |
|---|---|
| **Public school enrollment** | 1,685,016 |
| **Free or reduced-price lunch eligibility (%)** | 58.6% |
| **CTE enrollment (%)** | 18.6% |
| **Postsecondary students enrolled in public or private not-for-profit two-year or less-than-two year institutions (%)*** | 26.8% |
| **Perkins Funding, FY 2014** | |
| **Total Perkins funds received** | $38,240,445 |
| **Percentage distributed to secondary** | 50.0% |
| **Percentage distributed to postsecondary** | 50.0% |
| **Non-Perkins Funding, 2011-2012** | |
| **State secondary funding** | Decreased |
| **State postsecondary funding** | Decreased |
| **Local secondary funding** | Decreased |
| **Local postsecondary funding** | Decreased |

*Fall 2012
Sources: National Center for Education Statistics and U.S. Department of Education[138]
National Association of State Directors of Career Technical Education Consortium[139]

In 2011-2012, Georgia met six of eight targets established for core indicators of CTE performance. State performance fell short with regard to technical skill attainment (i.e., performance on industry-recognized technical skill assessments) and nontraditional completion (i.e., the proportion of concentrators from underrepresented gender groups who completed a program leading to employment in nontraditional fields) (Figure 2.12).

**Figure 2.12: Georgia Core Indicator Performance (2011-2012)**

| Core Indicator | Target Met | Actual Performance |
|---|---|---|
| **Academic Attainment in Reading/Language Arts** | Yes | 93.5% |
| **Academic Attainment in Mathematics** | Yes | 89.1% |
| **Technical Skill Attainment** | No | 39.0% |
| **School Completion** | Yes | 93.9% |
| **Student Graduation Rates** | Yes | 88.7% |
| **Placement** | Yes | >95.0% |
| **Nontraditional Participation** | Yes | 17.6% |
| **Nontraditional Completion** | No | 16.7% |

Sources: National Association of State Directors of Career Technical Education Consortium [140]
U.S. Department of Education[141]

[138] [1] Elementary/Secondary Information System, Op. cit.
[2] Integrated Postsecondary Education Data System, Op. cit.
[3] "Generate Enrollment (CTE Participants) Report," Op. cit.
[139] "CTE in Your State," Op. cit.
[140] Ibid.
[141] [1] Note: This source presents actual performance data disaggregated by demographic group. To determine overall performance across demographic groups, this table presents combined data for females and males.
[2] Georgia Accountability Report. 2011-2012. U.S. Department of Education. http://cte.ed.gov/accountability/reports/report_Acct2_piv.cfm?state=GA&year=2011-2012

### *Delivery Systems*

Georgia offers secondary-level CTE through comprehensive high schools and career academies.[142] Georgia public schools also participate in several SREB initiatives related to CTE, including:

- High Schools That Work;
- Making Middle Grades Work;
- Technology Centers That Work; and
- Advanced Career courses, which consist of a sequence of four courses that prepare students for high-skill, high-wage careers[143]

Georgia College & Career Academies, a state-run organization supported by the Technical College System of Georgia, the Georgia Department of Education, and the Office of the Lieutenant Governor, works with high schools and postsecondary institutions to provide guidance and resources to career academies.[144] Resources available through the organization's website include CTE literature, policy clarifications, and marketing materials.[145]

### *Career Clusters and Programs of Study*

Georgia relies on the National Career Clusters Framework and has implemented an additional career cluster focused on Energy. In total, the state offers 96 career pathways across the 17 career clusters.[146] As of the 2013-2014 academic year, all Georgia students are required in Grade 9 to select a career cluster or elect to take a greater number of college-prep courses. Students who select the career pathway option must complete three of the 23 credits required to graduate within their selected career pathway.[147]

The Georgia Department of Education offers school districts guidance and resources for adapting programs of study to meet local needs. In addition, the state provides schools with tools to advise students regarding career pathways; "student plan of study" documents include:

- Recommended coursework;
- Labor market information, such as labor market demand, annual wages, and entry-level requirements;

[142] "State Profiles," Op. cit.
[143] "Georgia and SREB." Southern Regional Education Board, 2013, pp. 3-4. http://publications.sreb.org/2013/GA2013.pdf
[144] "About." Georgia College & Career Academies. http://georgiacareeracademies.org/?page_id=6
[145] "Resources." Georgia College & Career Academies. http://georgiacareeracademies.org/?page_id=8
[146] "Career Clusters: Preparing Georgia's Students for College and Career Readiness." Georgia Department of Education, p. 1. http://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Documents/August2012-Career-Pathway-Presentation.pdf
[147] Badertscher, N. and T. Tagami. "Ga. ninth-graders will have to pick career paths." Athens Banner-Herald, September 9, 2013. http://onlineathens.com/local-news/2013-09-09/ga-ninth-graders-will-have-pick-career-paths

- Credentialing opportunities; and
- Postsecondary transitional information, including admission testing and dual enrollment opportunities.[148]

### *POSTSECONDARY PARTNERSHIPS*

Georgia postsecondary institutions partner with school districts to offer high school students a broad range of learning opportunities, including each of the following programs:

- ACCEL Program: provides for eligible students to take academic only, degree-level courses from postsecondary institutions that count for high school graduation credit and postsecondary credit.
- HOPE Grant Programs: provides for eligible students to take certain technical courses from the Technical College System of Georgia.
- Move On When Ready: allows for students to attend a postsecondary institution full-time during their junior and/or senior year of high school and receive high school credit and college credit simultaneously.
- Joint Enrollment: a process through which high school students take courses at a state postsecondary institution while still enrolled as a high school student and receive credit only at the postsecondary institution.
- Early College: a partnership between a designated local school system and University System of Georgia institution. There are currently several Early Colleges in Georgia.
- Gateway to College: located exclusively on a college campus, it is a form of early college for students aged 16 to 20 who have already dropped out of high school.[149]

## TENNESSEE

### *STATE PRIORITIES*

Tennessee invests heavily in secondary-level CTE, focusing specifically on CTE programs that will support the local labor market. Approximately two years ago, the state formed Pathways Tennessee, a statewide network tasked with developing "rigorous academic/career pathways […] linked to economic and labor market needs and trends."[150] In particular, the network seeks to promote pathways that:

- Have multiple entry and exit points in education;

[148] "Student Plan of Study Guidance. "Georgia Department of Education, May 2013, p. 4. http://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Documents/Student-Plan-of-Study-Guidance.pdf
[149] Taken verbatim from: "State Profiles," Op. cit.
[150] "Pathways Tennessee Strategic Plan." Tennessee Government, p. 1. http://www.tn.gov/education/cte/doc/PathwaysTNStrategicPlan7.2.13.pdf

- Transition seamlessly from secondary to postsecondary, allowing for college credit and industry certifications in high school; and
- Encourage/support active industry involvement in student learning.[151]

### *Funding and Performance*

In 2011-2012, Tennessee public schools enrolled more than 987,000 students, over half of whom were eligible for free or reduced-price lunches. In the same year, 17.5 percent of Tennessee students enrolled in CTE, and 28.8 percent of postsecondary students enrolled in a two-year or less-than-two-year public or private not-for-profit institution. In 2014, the state received over $23 million in Perkins funding, 85 percent of which was allocated to secondary schools. In 2011-2012, state and local funding for secondary-level CTE remained steady, while state funding for postsecondary CTE increased (Figure 2.13).

**Figure 2.13: Tennessee Demographics, Funding Levels, and Funding Trends**

| Tennessee Demographics, 2011-2012 | |
|---|---|
| **Public school enrollment** | 987,830 |
| **Free or reduced-price lunch eligibility (%)** | 56.2% |
| **CTE enrollment (%)** | 17.5% |
| **Postsecondary students enrolled in public or private not-for-profit two-year or less-than-two year institutions (%)*** | 28.8% |
| **Perkins Funding, FY 2014** | |
| **Total Perkins funds received** | $23,042,024 |
| **Percentage distributed to secondary** | 85% |
| **Percentage distributed to postsecondary** | 15% |
| **Non-Perkins Funding, 2011-2012** | |
| **State secondary funding** | Maintained |
| **State postsecondary funding** | Increased |
| **Local secondary funding** | Maintained |
| **Local postsecondary funding** | -- |

*Fall 2012 --Data unavailable
Sources: National Center for Education Statistics and U.S. Department of Education[152]
National Association of State Directors of Career Technical Education Consortium[153]

As shown in Figure 2.14, Tennessee met performance targets for all core indicators in 2011-2012.

[151] Taken verbatim from: Ibid.
[152] [1] Elementary/Secondary Information System, Op. cit.
[2] Integrated Postsecondary Education Data System, Op. cit.
[3] "Generate Enrollment (CTE Participants) Report," Op. cit.
[153] "CTE in Your State," Op. cit.

**Figure 2.14: Tennessee Core Indicator Performance (2011-2012)**

| Core Indicator | Target Met | Actual Performance |
|---|---|---|
| **Academic Attainment in Reading/Language Arts** | Yes | 67.8% |
| **Academic Attainment in Mathematics** | Yes | 73.4% |
| **Technical Skill Attainment** | Yes | 94.4% |
| **School Completion** | Yes | >95.0% |
| **Student Graduation Rates** | Yes | >95.0% |
| **Placement** | Yes | 91.2% |
| **Nontraditional Participation** | Yes | 36.0% |
| **Nontraditional Completion** | Yes | 54.9% |

Sources: National Association of State Directors of Career Technical Education Consortium [154]
U.S. Department of Education[155]

### *Delivery Systems*

In Tennessee, CTE is primarily delivered through comprehensive high schools and "CTE high schools," which integrate an academic curriculum with "career-specific training."[156] Although data specific to CTE high schools in Tennessee is somewhat limited, national data suggest that these schools are more likely than regular schools to implement a non-traditional learning model (e.g., multi-age grouping, block scheduling, keeping students with the same teacher year-over-year), operate in city or suburban settings, and offer off-campus work-based learning opportunities.[157]

### *Career Clusters and Programs of Study*

Tennessee relies on the National Career Clusters Framework and focuses on the development of "high-skill, high-wage, or high-demand" programs of study.[158] As of the 2015-2016 academic year, the state will offer 57 programs of study at the high school level across the 16 career clusters.[159] The state also establishes academic standards and provides instructional resources for each course option associated with each career cluster.[160]

[154] Ibid.
[155] [1] Note: This source presents actual performance data disaggregated by demographic group. To determine overall performance across demographic groups, this table presents combined data for females and males.
[2] Tennessee Accountability Report. 2011-2012. U.S. Department of Education. http://cte.ed.gov/accountability/reports/report_Acct2_piv.cfm?state=TN&year=2011-2012
[156] "State Profiles," Op. cit.
[157] "Public Career and Technical Education High Schools, Principals, and Teachers in 2008." National Center for Education Statistics, June 2012. http://nces.ed.gov/pubs2012/2012250.pdf
[158] "State Profiles," Op. cit.
[159] "2015-2016 Programs of Study." Tennessee Department of Education. http://www.tn.gov/education/cte/clusters/201516POS.pdf
[160] "2014-15 CTE Standards." Tennessee Department of Education. http://www.tn.gov/education/standards/cte.shtml

### *POSTSECONDARY PARTNERSHIPS*

By law, the Tennessee Consortium for Cooperative Innovative Education is responsible for "increasing and expanding postsecondary opportunities for high school students."[161] To maximize postsecondary learning opportunities, the state currently offers two dual credit options—one for which students may earn postsecondary credit toward a degree at the institution where the student earns the credit and another for which students may earn postsecondary credit at any public institution in the state:

- Local dual credit: High school course aligned to a postsecondary course and taught at the high school by high school faculty for high school credit. Students are able to receive postsecondary credit by successfully completing the course and passing an assessment developed and/or recognized by the granting postsecondary institution.
- Statewide dual credit: High school course with accompanying challenge exam created by Tennessee secondary and postsecondary faculty. Students who meet or exceed the established cut score set for the exam earn credits that can be applied to any public postsecondary institution in Tennessee.[162]

## MICHIGAN

### *STATE PRIORITIES*

In 2013, Governor Rick Snyder set aside $1 million in the School Aid Act for school districts to integrate academic content into CTE programs.[163] In 2014, to provide greater flexibility for CTE, the state legislature passed two bills (House Bills 4465 and 4466) making changes to the Michigan Merit Curriculum (MMC).[164] In addition to requiring schools to inform students and parents of CTE options, the bills included the following CTE-related modifications to the MMC:

- Students would be able to fulfill the algebra 2 requirement by taking a CTE course or courses which cover at least the portion of the algebra 2 benchmarks assessed on the Michigan Merit Exam (MME).
- Students in the graduating classes of 2015-2020 would be allowed to substitute a CTE course or an additional visual or performing arts course for one of the two required foreign language credits.
- In addition to chemistry or physics, students would be able to fulfill the second science credit by taking anatomy, agricultural science, or a course that provides at least the portion of the chemistry or physics benchmarks assessed on the MME.

[161] "Early Postsecondary Opportunities." Tennessee Department of Education. http://www.state.tn.us/education/cte/postsecondary.shtml
[162] Ibid.
[163] "State Policies Impacting CTE: 2013 Year in Review." National Association of State Directors of Career Technical Education Consortium and Association for Career and Technical Education, March 27, 2014. p. 9. https://www.acteonline.org/uploadedFiles/Assets_and_Documents/Global/files/CTE_Info/ACTE-NASDCTEc_State_Policy_Review_2013.pdf
[164] Kefgen, B. "MMC Bills Pass Legislature in a Last-Minute Flurry." Michigan Association of Secondary School Principals, June 13, 2014. http://mymassp.com/content/mmc_bills_pass_legislature_lastminute_flurry

Further, students would be able to substitute a CTE course for the third science credit.[165]

The aforementioned bills also mentioned CTE among the changes made to the state's Personal Curriculum (PC) program. Specifically, the bills permit students with PCs to:

- Substitute technical math for algebra 2 or fulfill the algebra 2 requirement by taking a class that covers the portion of the algebra 2 benchmarks assessed on the MME;
- Substitute CTE courses for up to one credit of social studies, one credit of health and physical education, and one credit of visual, performing, or applied arts[166]

### *Funding and Performance*

In 2011-2012, Michigan public schools enrolled over 1.5 million students, nearly 48 percent of whom were eligible for free or reduced-price lunches. That year, seven of the other nine states profiled in this report had higher proportions of public school students enrolled in CTE. However, over one-third of Michigan's postsecondary students attended a public or private not-for-profit two-year or less-than-two-year institution.

In 2014, Michigan received over $37 million in Perkins funding and allocated 60 percent of that funding to secondary schools. For the 2011-2012 academic year, state and local CTE funding for secondary and postsecondary CTE programs remained steady (Figure 2.15).

**Figure 2.15: Michigan Demographics, Funding Levels, and Funding Trends**

| Michigan Demographics, 2011-2012 | |
|---|---|
| **Public school enrollment** | 1,533,484 |
| **Free or reduced-price lunch eligibility (%)** | 47.9% |
| **CTE enrollment (%)** | 7.5% |
| **Postsecondary students enrolled in public or private not-for-profit two-year or less-than-two year institutions (%)*** | 34.4% |
| **Perkins Funding, FY 2014** | |
| **Total Perkins funds received** | $37,280,167 |
| **Percentage distributed to secondary** | 60.0% |
| **Percentage distributed to postsecondary** | 40.0% |
| **Non-Perkins Funding, 2011-2012** | |
| **State secondary funding** | Maintained |
| **State postsecondary funding** | Maintained |
| **Local secondary funding** | Maintained |
| **Local postsecondary funding** | Maintained |

*Fall 2012
Sources: National Center for Education Statistics and U.S. Department of Education[167]
National Association of State Directors of Career Technical Education Consortium[168]

[165] Adapted from Ibid.
[166] Adapted from Ibid.
[167] [1] Elementary/Secondary Information System, Op. cit.
[2] Integrated Postsecondary Education Data System, Op. cit.
[3] "Generate Enrollment (CTE Participants) Report," Op. cit.

In the 2012-2013 academic year, Michigan missed performance targets for two core indicators: academic attainment in reading/language arts and academic attainment in mathematics. Performance for the reading/language arts target fell approximate 3.8 percentage points short, and performance for the mathematics target fell approximately 10.9 percentage points short (Figure 2.16).

**Figure 2.16: Michigan Core Indicator Performance (2012-2013)**

| Core Indicator | Target Met | State Target | Actual Performance |
|---|---|---|---|
| **Academic Attainment in Reading/Language Arts** | No | 59.0% | 55.2% |
| **Academic Attainment in Mathematics** | No | 36.0% | 25.1% |
| **Technical Skill Attainment** | Yes | 49.0% | 65.2% |
| **School Completion** | Yes | 93.5% | 95.3% |
| **Student Graduation Rates** | Yes | 88% | 94.9% |
| **Placement** | Yes | 93% | 94.9% |
| **Nontraditional Participation** | Yes | 23.5% | 25.6% |
| **Nontraditional Completion** | Yes | 23.0% | 31.0% |

Source: Michigan Department of Education[169]

### *Delivery Systems*

Michigan operates 61 area career and technical education centers/programs across the state.[170] These centers, which serve high school students and adults, offer half-day training in "high-demand, high-wage" fields.[171] In addition to these centers, the Michigan Center for Career and Technical Education, funded through a state leadership grant, serves CTE programs statewide through the following services:

- Locating and evaluating national and industry standards relevant to and related to high-quality CTE programs and CTE curriculum development
- Developing and managing a web portal that disseminates information to state CTE programs about state-approved program standards, CTE curriculum resources, and CTE program evaluation tools
- Facilitating CTE program-improvement technical assistance
- Providing state-of-the-art communication and training capacity[172]

Secondary CTE is also supported by 53 Career Education Planning Districts (CEPDs), which facilitate regional planning processes and collaborative CTE delivery.[173]

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[168] "CTE in Your State," Op. cit.
[169] "Career and Technical Information System Public Reports." Michigan Department of Education. http://www.cteisreports.com/Reports/CPI/CPI_areatotals_RV.aspx?region=(SELECT)&cepd=(SELECT)&fano=(SELECT)&OBno=(SELECT)&cipcode=(SELECT)&cluster=(SELECT)&schoolyear=2012-2013
[170] "Area Career and Technical Education Centers/Programs." Michigan Department of Education. http://www.michigan.gov/documents/mde/Area_Center_Map_331157_7.pdf
[171] "State Profiles," Op. cit.
[172] Taken verbatim from: "Carl D. Perkins Consolidated Annual Report: Program year July 1, 2011-June 30, 2012." Michigan Department of Education, p. 4. http://cte.ed.gov/Docs/CARNarrative/MI_narrative_2011-2012.pdf
[173] Ibid., p. 1.

### *CAREER CLUSTERS AND PROGRAMS OF STUDY*

Michigan offers the 16 career clusters established in the National Career Clusters Framework as well as an additional career cluster focused on family and consumer science.[174] Across the 17 career clusters, the state offers dozens of programs. [175] Within each program, the state has established technical, pathway, foundation, and career and employability standards.[176]

### *POSTSECONDARY PARTNERSHIPS*

Secondary CTE programs must "demonstrate curriculum alignment and program articulation with at least one postsecondary institution in the state of Michigan."[177] Changes to the Postsecondary Enrollment Options Act, passed in 1996, and the Career and Technical Preparation Act, passed in 2000, enable students in Grades 9 through 12 to participate in dual enrollment and complete as many as 10 college courses during high school.[178]

Moreover, the state supports district efforts to establish Early/Middle College (E/MC) high schools. Students enrolled in the five-year programs graduate with a high school diploma and one of the following: (1) an associate's degree, (2) the Michigan Early/Middle College Association (MEMCA) technical certification, or (3) up to 60 transferable college credits.[179] At present, 19 E/MC high schools and 49 E/MC college programs operate across the state.[180]

Michigan also participates in Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP), a grant program administered by the U.S. Department of Education. The six-year program, which serves cohorts of students beginning in Grade 7, focuses "specifically on preparing students with limited financial means" for postsecondary success in an apprenticeship or at a two- or four-year institution.[181] By partnering with the state's 15 public higher education institutions, the program serves students in 38 school districts and 77 schools.[182] Students who complete the program and either graduate from high school or earn a GED are eligible to receive a scholarship for postsecondary education.[183]

Finally, in response to recommendations from the Governor's 2013 Economic Summit, the Michigan Economic Development Corporation has partnered with community colleges in 10

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[174] "National Career Clusters." Michigan Center for Career & Technical Education. http://ctenavigator.org/programs
[175] Ibid.
[176] "01.0000 – Agriculture, Agriculture Operations and Related Sciences." Michigan Center for Career & Technical Education. http://ctenavigator.org/programs/program/48
[177] "Michigan State Plan for Career and Technical Education 2008-2013." Michigan Department of Education, p. 5. http://cte.ed.gov/docs/stateplan/MI5YearStatePlan.pdf
[178] "Carl D. Perkins Consolidated Annual Report: Program year July 1, 2011-June 30, 2012," Op. cit., p. 5.
[179] "Early/Middle College High School Opportunities." Michigan Department of Education. http://www.michigan.gov/mde/0,4615,7-140-43092_51178---,00.html
[180] "Early/Middle College High Schools & Programs." Michigan Department of Education. http://www.michigan.gov/documents/mde/EMC_LIST_9.25.14_469752_7.pdf
[181] "Gear UP." University of Michigan. http://gearup.umich.edu/faqs/
[182] "Michigan GEAR UP Program." Western Michigan University. http://wmich.edu/multicultural/gearup/index.html
[183] Ibid.

"prosperity regions" to launch the Career Jump Start program.[184] The program aims to increase student awareness of and interest in short-term credentials, associate degrees, and apprenticeships in high demand by employers. Career Liaisons at participating community colleges will share information about high-demand jobs and related training programs with educators, high school students, and parents. In addition, the program offers 14 Lifelong Soft Skills eLearning modules to enable students to "learn about the basic and foundational skills needed to succeed in the 21st century workplace."[185] Proponents of the program note that, "through improved connectivity between employers and the K-12 system, high school graduates in Michigan will be more informed about and connected to high-demand career options."[186]

## VIRGINIA

### *STATE PRIORITIES*

In 2013, the Virginia legislature passed a number of laws to promote secondary-level CTE. Two pieces of legislation, in particular, expand CTE opportunities for high school students:

- HB2101 directs the Board of Education to develop guidelines for the establishment of High School to Work Partnerships, whereby each local school division's CTE administrator works with the guidance counselor office of each public high school to partner with local businesses to create apprenticeships, internships, and job shadow programs in a variety of trades and skilled labor positions.
- SB846 requires the State Board for Community Colleges to develop policies directing community colleges to offer any open seat in any career or technical course that is not at full capacity to students enrolled in public high schools that are located in the region served by the community college.[187]

Although state and local funding for CTE decreased in 2011-2012 (Figure 2.17), these laws may represent a growing prioritization of CTE since that time.

### *FUNDING AND PERFORMANCE*

In 2011-2012, Virginia public schools enrolled over 1.2 million students, 38.3 percent of whom were eligible for free or reduced-price lunches. The state enrolled a substantial proportion of students in CTE (20.9 percent), and approximately one-third of postsecondary students enrolled in public or private not-for-profit two-year or less-than-two-year institutions (Figure 2.17).

[184] "Career Jump Start." Michigan Economic Development Corporation. http://www.mitalent.org/career-jump-start/
[185] Ibid.
[186] "New Career Liaison Program Prepares Students for Training After High School." CBS Detroit, December 11, 2013. http://detroit.cbslocal.com/2013/12/11/new-career-liaison-program-prepares-students-for-training-after-high-school/
[187] "State Policies Impacting CTE: 2013 Year in Review," Op. cit., pp. 16-17.

In 2014, Virginia received over $23.6 million in Perkins funding, and 77.3 percent of that funding was allocated to secondary CTE programs. As noted above, in 2011-2012, state and local funding for secondary and postsecondary CTE programs decreased.

**Figure 2.17: Virginia Demographics, Funding Levels, and Funding Trends**

| Virginia Demographics, 2011-2012 | |
|---|---|
| **Public school enrollment** | 1,255,551 |
| **Free or reduced-price lunch eligibility (%)** | 38.3% |
| **CTE enrollment (%)** | 20.9% |
| **Postsecondary students enrolled in public or private not-for-profit two-year or less-than-two year institutions (%)*** | 33.0% |
| **Perkins Funding, FY 2014** | |
| **Total Perkins funds received** | $23,634,248 |
| **Percentage distributed to secondary** | 77.3% |
| **Percentage distributed to postsecondary** | 13.0% |
| **Non-Perkins Funding, 2011-2012** | |
| **State secondary funding** | Decreased |
| **State postsecondary funding** | Decreased |
| **Local secondary funding** | Decreased |
| **Local postsecondary funding** | Decreased |

*Fall 2012
Sources: National Center for Education Statistics and U.S. Department of Education[188]
National Association of State Directors of Career Technical Education Consortium[189]

In 2011-2012, Virginia met performance targets for all core indicators (Figure 2.18).

**Figure 2.18: Virginia Core Indicator Performance (2011-2012)**

| Core Indicator | Target Met | Actual Performance |
|---|---|---|
| **Academic Attainment in Reading/Language Arts** | Yes | >95.0% |
| **Academic Attainment in Mathematics** | Yes | >95.0% |
| **Technical Skill Attainment** | Yes | 76.6% |
| **School Completion** | Yes | >95.0% |
| **Student Graduation Rates** | Yes | >95.0% |
| **Placement** | Yes | 94.2% |
| **Nontraditional Participation** | Yes | 36.6% |
| **Nontraditional Completion** | Yes | 30.8% |

Sources: National Association of State Directors of Career Technical Education Consortium [190]
U.S. Department of Education[191]

[188] [1] Elementary/Secondary Information System, Op. cit.
[2] Integrated Postsecondary Education Data System, Op. cit.
[3] "Generate Enrollment (CTE Participants) Report," Op. cit.
[189] "CTE in Your State," Op. cit.
[190] Ibid.
[191] [1] Note: This source presents actual performance data disaggregated by demographic group. To determine overall performance across demographic groups, this table presents combined data for females and males.
[2] Virginia Accountability Report. 2011-2012. U.S. Department of Education. http://cte.ed.gov/accountability/reports/report_Acct2_piv.cfm?state=VA&year=2011-2012

### *Delivery Systems*

Virginia delivers CTE through multiple systems at the secondary level, including:

- Comprehensive high schools;
- Area technical schools and career centers, which offer supplementary part-time courses;
- Regional career and technical centers, which offer courses for multiple schools and districts in a centralized location; and
- STEM academies and health sciences academies, which are programs within high schools designed to expand educational options in high-demand fields.[192]

Virginia offers 11 regional and technical centers, 23 STEM academies, and nine health sciences academies.[193]The state delivers all postsecondary CTE through its community college system.[194] In addition to state-sponsored CTE schools and academies, Virginia participates in the SREB's High Schools That Work initiative, a program that emphasizes CTE in the high school curriculum.[195]

### *Career Clusters and Programs of Study*

Virginia organizes CTE around the 16 career clusters in the National Career Clusters Framework.[196] The state previously organized CTE under the eight core program areas of agricultural education, business and IT, career connections, family and consumer sciences, health and medical sciences, marketing, technology, and trade and industrial education.[197] Across the 16 career clusters, the state offers a total of 79 career pathways that students may pursue. Beginning in the 2013-14 academic year, all schools require students in Grade 7 to develop a personal "academic and career plan" to be completed in the fall of Grade 8. All CTE courses in the state align with one or more cluster and career pathways based on the skills taught in the class.[198]

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[192] "State Profiles," Op. cit.

[193] [1] "Regional Career & Technical Centers." Virginia Department of Education. http://www.va-doeapp.com/RegionalCT.aspx?w=true
[2] "Governor's STEM Academies." Virginia Department of Education. http://www.doe.virginia.gov/instruction/career_technical/gov_academies/academies/index.shtml
[3] "Governor's Health Sciences Academies." Virginia Department of Education. http://www.doe.virginia.gov/instruction/career_technical/gov_health_sciences_academies/index.shtml

[194] Ibid.

[195] "CTE Programs & Initiatives." Virginia Department of Education. http://www.doe.virginia.gov/instruction/career_technical/programs/

[196] "Career Clusters." Virginia Department of Education. http://www.doe.virginia.gov/instruction/career_technical/career_clusters/index.shtml

[197] "State Profiles," Op. cit.

[198] "Career Clusters and Academic and Career Plans of Study: Virginia Best Practices." Virginia Department of Education, December 13, 2012, slides 15, 24, 28, and 36. Presentation retrieved from: http://www.doe.virginia.gov/instruction/career_technical/career_clusters/

The Virginia Department of Education provides multiple resources and guides to help schools align CTE courses with pathways and clusters, including the Administrative Planning Guide, the Career Planning Guide, and the Career and Technical Education Reporting System User's Manual.[199] Published documents outlining academic and career plans/programs of study describe the course progressions that lead to a postsecondary credential, certificate, or an associate's or bachelor's degree.[200]

### *POSTSECONDARY PARTNERSHIPS*

High school students across Virginia have the opportunity to participate in dual enrollment programs due to steps the state has taken to facilitate articulation agreements between high schools and community colleges. The Virginia Plan for Dual Enrollment, established in 2008, provides a "state-wide framework for dual enrollment arrangements between the public schools and community colleges."[201] Through this framework, public school boards and local community colleges may pursue one of three arrangements:

- Participating high school students enroll in regularly scheduled college courses with other community college students;
- Participating high school students enroll in specially scheduled college credit courses taught at the high school; or
- Participating high school students enroll in specially scheduled college credit courses taught for high school students at the community college.[202]

Virginia also offers an Early College Scholars program that allows eligible high school students to earn transferable college credit and work towards an Advanced Studies Diploma. The Commonwealth College Course Collaborative supports Early College Scholars by defining a set of courses that transfer to Virginia's public institutions.[203] An online resource called the Virginia Education Wizard provides a repository of information about the state's various dual enrollment, articulation, and transfer options.[204]

## INDIANA

### *STATE PRIORITIES*

The Indiana legislature has enacted multiple laws to support CTE; as described at the conclusion of this profile, many of these laws promote postsecondary partnerships between high schools and local postsecondary institutions. Although local CTE funding decreased in

[199] Ibid., p. 36.
[200] "Academic and Career Plans of Study." Virginia Department of Education. http://www.doe.virginia.gov/instruction/career_technical/career_clusters/plans_of_study/index.shtml
[201] "Virginia Plan for Dual Enrollment Between Virginia Public Schools and Community Colleges." Virginia Department of Education, March 2008, p. 1. http://www.doe.virginia.gov/instruction/graduation/early_college_scholars/va_plan_dual_enrollment.pdf
[202] Ibid.
[203] "Early College Scholars Program." Virginia Department of Education. http://www.doe.virginia.gov/instruction/graduation/early_college_scholars/
[204] "Virginia Education Wizard." Virginia Department of Education. https://www.vawizard.org/vccs/Main.action

2011-2012 (Figure 2.19), the state investment in CTE appears to have increased in subsequent years. In 2013, Indiana proposed a $6 million expansion in CTE funding over the next two years to support the formation of Indiana Works Councils, tasked with developing "regional, demand-driven curricula" that support high-wage career paths.[205] The proposed Indiana Works Councils received unanimous support from the legislature and now operate in 11 regions across the state.[206]

### *Funding and Performance*

In 2011-2012, Indiana enrolled over 1 million students, 48 percent of whom qualified for free or reduced-price lunches. Nearly 13 percent of students were enrolled in CTE, and over 22 percent of postsecondary students were enrolled in public or private not-for-profit two-year or less-than-two-year institutions.

In 2014, Indiana received over $24.8 million in Perkins funding and allocated 64 percent of that funding to secondary CTE. In 2011-2012, state funding for CTE remained steady for secondary programs and increased for postsecondary programs, while local funding decreased for both secondary and postsecondary CTE (Figure 2.19).

**Figure 2.19: Indiana Demographics, Funding Levels, and Funding Trends**

| Indiana Demographics, 2011-2012 | |
|---|---|
| **Public school enrollment** | 1,037,779 |
| **Free or reduced-price lunch eligibility (%)** | 48.0% |
| **CTE enrollment (%)** | 12.9% |
| **Postsecondary students enrolled in public or private not-for-profit two-year or less-than-two year institutions (%)*** | 22.2% |
| **Perkins Funding, FY 2014** | |
| **Total Perkins funds received** | $24,843,250 |
| **Percentage distributed to secondary** | 64.0% |
| **Percentage distributed to postsecondary** | 36.0% |
| **Non-Perkins Funding, 2011-2012** | |
| **State secondary funding** | Maintained |
| **State postsecondary funding** | Increased |
| **Local secondary funding** | Decreased |
| **Local postsecondary funding** | Decreased |

*Fall 2012
Sources: National Center for Education Statistics and U.S. Department of Education[207]
National Association of State Directors of Career Technical Education Consortium[208]

In 2011-2012, Indiana failed to meet targets for two performance indicators: academic attainment in reading/language arts and nontraditional completion (Figure 2.20).

[205] "Governor Pence's Recommended Budget: Fiscal Years 2014 & 2015." Office of the Governor of Indiana, p. iii. http://www.in.gov/sba/files/Governor_Pence_Recommended_Budget_for_FY2014_and_FY2015.pdf
[206] "Indiana Works Councils." Office of the Governor of Indiana. http://www.in.gov/irwc/
[207] [1] Elementary/Secondary Information System, Op. cit.
[2] Integrated Postsecondary Education Data System, Op. cit.
[3] "Generate Enrollment (CTE Participants) Report," Op. cit.
[208] "CTE in Your State," Op. cit.

**Figure 2.20: Indiana Core Indicator Performance (2011-2012)**

| Core Indicator | Target Met | Actual Performance |
|---|---|---|
| **Academic Attainment in Reading/Language Arts** | No | 61.7% |
| **Academic Attainment in Mathematics** | Yes | 67.2% |
| **Technical Skill Attainment** | Yes | 83.0% |
| **School Completion** | Yes | >95.0% |
| **Student Graduation Rates** | Yes | --[209] |
| **Placement** | Yes | 91.1% |
| **Nontraditional Participation** | Yes | 31.8% |
| **Nontraditional Completion** | No | 23.8% |

--Data unavailable
Sources: National Association of State Directors of Career Technical Education Consortium [210]
U.S. Department of Education[211]

### *Delivery Systems*

Indiana provides CTE through comprehensive high schools and area career centers that serve students at the secondary level.[212] Although the Indiana Department of Education does not appear to have made guidelines for the operation of these centers publicly available, individual center websites describe the purpose of these agencies as offering supplemental opportunities for high school students and adult learners to develop college and career readiness skills and earn industry certifications.[213]

### *Career Clusters and Programs of Study*

Indiana organizes CTE around 12 career clusters, including:

- Agriculture
- Architecture and construction
- Arts, AV technology, and communication
- Business and marketing
- Hospitality and human services
- Information technology
- Manufacturing
- Public Safety
- STEM

[209] For females, a student graduation rate of ">95" percent is reported, with no underlying data provided to calculate a more specific percentage. For males, the student graduation rate equals 93.4 percent.
[210] Ibid.
[211] [1] Note: This source presents actual performance data disaggregated by demographic group. To determine overall performance across demographic groups, this table presents combined data for females and males.
[2] Indiana Accountability Report. 2011-2012. U.S. Department of Education. http://cte.ed.gov/accountability/reports/report_Acct2_piv.cfm?state=IN&year=2011-2012
[212] "State Profiles," Op. cit.
[213] [1] "Find Your Future." Hammond Area Career Center. http://50.201.104.116/acc/
[2] Home page. "Muncie Area Career Center." http://www.muncie.k12.in.us/maccweb
[3] "Welcome to Gray Area Career Center." Gray Community School Corporation. http://www.garycsc.k12.in.us/schools/gary-area-career-center/

- Education and training
- Health science
- Transportation[214]

Across the 12 career clusters, students may pursue one of 35 pathways, most of which also offer sub-concentrations for students with specific interests. Regardless of pathway, all CTE students must complete two foundation courses: Preparing for College and Careers and Personal Financial Responsibility.[215]

### *POSTSECONDARY PARTNERSHIPS*

State and independent universities in Indiana offer dual credit courses that allow high school students to earn both high school and college-level credit. Dual credit courses may be taught by high school faculty, adjunct faculty, or college faculty, and courses may be taught on high school campuses, college campuses, online, or through distance education.[216] State law requires all public high schools to offer at least two dual credit courses. Three state initiatives support dual credit programs in Indiana: the Double Up for College Program, High School Fast Track to College Program, and Project EXCEL.[217]

In 2006, Indiana passed the Double Up for College law that allows public postsecondary institutions to set criteria for dual credit courses and ensure that the curriculum for each course warrants college-level credit. All public colleges must accept credit for dual enrollment courses that are in the Core Transfer Library (CTL) and subject to an articulation agreement.[218] The CTL is a list of courses that transfer among Indiana's public and private colleges. All courses meet general education or elective requirements for undergraduate programs.[219]

Indiana's High School Fast Track to College program allows public postsecondary institutions to offer programs that give older students the opportunity to earn a diploma by completing coursework at a college or university. The program was designed to allow students who had dropped out of high school to earn credits and work towards a certificate, associate's degree, or bachelor's degree.[220]

Finally, Project EXCEL, offered through Vincennes University, provides eligible high school students the opportunity to enroll in college courses for $25 per credit hour. The dual

[214] "Indiana College & Career Pathways." Indiana Department of Education. http://www.doe.in.gov/cte/indiana-college-career-pathways
[215] Ibid.
[216] "Dual Credit." Indiana Department of Education, October 9, 2014. http://webcache.googleusercontent.com/search?q=cache:ITJi7eeE5twJ:www.doe.in.gov/achievement/ccr/dual-credit+&cd=1&hl=en&ct=clnk&gl=us
[217] "State Profiles," Op. cit.
[218] "High School-to-College Transition Project." Indiana.gov, p. 1. http://www.in.gov/edroundtable/files/CEPLaws.pdf
[219] "Core Transfer Library (CTL)." TransferIN.net. http://www.transferin.net/ctl
[220] "High School-to-College Transition Project." Op. cit.

credit/concurrent enrollment program allows students to complete Vincennes University coursework at their local high school or career center.[221]

## OHIO

### *STATE PRIORITIES*

In 2014, the state took two steps to increase funding for postsecondary CTE. Specifically, a nearly $11 million, two-year grant with matching funds provided by various industries will expand or create co-op and internship programs for students.[222] Across the state, community colleges, public and private universities, and other postsecondary institutions (e.g., Ohio technical centers) will partner with businesses to provide paid and credited co-op and internship opportunities to students.[223] In addition, the state awarded nearly $3 million in grant funds for nine community colleges and three universities to develop or expand workforce development education and training programs.[224] The funds will support equipment purchases by laboratories and other training facilities.

The state has acted to increase the scope and visibility of CTE at the secondary level as well. In 2013, the state legislature passed HB 127, designating March as Career-Technical Education and Skilled Workforce Development Month. The move aims to raise awareness of CTE and its importance to the state's economy.[225] That year, the State Board of Education also introduced an Ohio Career-Technical Education Report Card. Issued for each of the state's 91 career-technical planning districts (CTPDs), the report cards exceed federal Perkins requirements. For example, the report cards include letter grades for: achievement (e.g., technical skill assessment passage rate); graduation (e.g., four- and five-year graduation rates); post-program outcomes (e.g., industry credentials and post-program placement); and prepared for success (e.g., proportion of dual enrollment students).[226]

Further, in 2014, HB 487 mandated the following changes relating to secondary-level CTE:

- Reform the College Credit Plus program (e.g., requiring public high schools and public college to participate)
- Begin offering CTE to students in Grade 7
- Provide three pathways to graduation: passing end-of-course exams; achieving sufficiently-high scores on certain sections of nationally-standardized assessments

[221] "Project EXCEL (Dual Credit)." Vincennes University. http://www.vinu.edu/projectexcel
[222] "Ohio Board of Regents Announces Internship/Co-Op Grant Recipients." Ohio Higher Ed, March 11, 2014. https://www.ohiohighered.org/press/ohio_board_regents_announces_internshipco_op_grant_recipients
[223] Ibid.
[224] "Ohio Board of Regents Announces Workforce Development Equipment and Facility Grant Recipients." Ohio Higher Ed, May 6, 2014. https://www.ohiohighered.org/press/ohio_board_regents_announces_workforce_development_equipment_and_facility_grant_recipients
[225] "State Policies Impacting CTE: 2013 Year in Review," Op. cit., p. 12.
[226] "State Board approves Ohio's first career-tech report card." Ohio Career Tech News, Ohio Department of Education, May 16, 2013. http://ohiocareertech.wordpress.com/2013/05/16/state-board-approves-ohios-first-career-tech-report-card/

(e.g., ACT or SAT); or completing a workforce diploma (e.g., by passing a job skills assessment or earning an industry-recognized credential)[227]

### *Funding and Performance*

In 2011-2012, Ohio public schools enrolled over 1.7 million students, 43.6 percent of whom were eligible for free or reduced-price lunches. Although only 6.9 percent of students were enrolled in CTE programs, 27.6 percent of postsecondary students were enrolled in public or private not-for-profit two-year or less-than-two-year institutions.

In 2014, Ohio received over $42 million in Perkins funding and distributed 79 percent of that funding to secondary CTE programs. For the 2011-2012 academic year, state and local CTE funding remained steady for secondary and postsecondary programs (Figure 2.21)

**Figure 2.21: Ohio Demographics, Funding Levels, and Funding Trends**

| Ohio Demographics, 2011-2012 | |
|---|---|
| **Public school enrollment** | 1,738,642 |
| **Free or reduced-price lunch eligibility (%)** | 43.6% |
| **CTE enrollment (%)** | 6.9% |
| **Postsecondary students enrolled in public or private not-for-profit two-year or less-than-two year institutions (%)*** | 27.6% |
| **Perkins Funding, FY 2014** | |
| **Total Perkins funds received** | $42,750,001 |
| **Percentage distributed to secondary** | 79.0% |
| **Percentage distributed to postsecondary** | 21.0% |
| **Non-Perkins Funding, 2011-2012** | |
| **State secondary funding** | Maintained |
| **State postsecondary funding** | Maintained |
| **Local secondary funding** | Maintained |
| **Local postsecondary funding** | Maintained |

*Fall 2012
Sources: National Center for Education Statistics and U.S. Department of Education[228]
National Association of State Directors of Career Technical Education Consortium[229]

In 2011-2012, Ohio met targets for all performance indicators (Figure 2.22).

[227] "H.B. 487." Ohio Legislative Service Commission. http://education.ohio.gov/getattachment/7fb2c28f-319a-460e-8a50-08a6e3f526c7/Comp-Doc-with-Conference-Committee-report.pdf.aspx
[228] [1] Elementary/Secondary Information System, Op. cit.
[2] Integrated Postsecondary Education Data System, Op. cit.
[3] "Generate Enrollment (CTE Participants) Report," Op. cit.
[229] "CTE in Your State," Op. cit.

**Figure 2.22: Ohio Core Indicator Performance (2011-2012)**

| Core Indicator | Target Met | State Target | Actual Performance |
|---|---|---|---|
| **Academic Attainment in Reading/Language Arts** | Yes | 93.6% | --[230] |
| **Academic Attainment in Mathematics** | Yes | 92.3% | 94.2% |
| **Technical Skill Attainment** | Yes | 68.0% | 72.5% |
| **School Completion** | Yes | 95.0% | >95.0% |
| **Student Graduation Rates** | Yes | 82.4% | >95.0% |
| **Placement** | Yes[231] | 88.3% | 86.6% |
| **Nontraditional Participation** | Yes | 20.8% | 31.0% |
| **Nontraditional Completion** | Yes | 17.8% | --[232] |

--Data unavailable
Sources: National Association of State Directors of Career Technical Education Consortium[233]
U.S. Department of Education[234]
Ohio Department of Education[235]

### *Delivery Systems*

Ohio delivers CTE primarily through comprehensive high schools and CTE centers. The state houses comprehensive high schools and CTE centers within Career-Technical Planning Districts (CTPDs). CTPDs also consist of Joint Vocational School Districts (JVSDs) and Community Schools, described as follows:

- Joint Vocational School Districts (JVSDs) include groups of smaller schools districts that formally agree to collaboratively deliver standards-based CTE programming. JVSDs generally offer programs at a designated CTE center or at member high schools.
- The public, nonprofit, nonsectarian Community Schools operate independently of school districts and contract with authorized sponsoring entities. Community Schools may offer Career Academies (i.e., schools-within-a-school) that integrate academic content with CTE.[236]

[230] For females, a rate of ">95" percent is reported, with no underlying data provided to calculate a more specific percentage. For males, the rate equals 94.0 percent.
[231] The National Association of State Directors of Career Technical Education Consortium refers to this target as being met, even though the actual placement rate (as reported by the U.S. Department of Education) is less than the state target rate.
[232] For males, a nontraditional completion rate of "≤10" percent is reported, with no underlying data provided to calculate a more specific percentage. For females, the nontraditional completion rate equals 48.4 percent.
[233] Ibid.
[234] [1] Note: This source presents actual performance data disaggregated by demographic group. To determine overall performance across demographic groups, this table presents combined data for females and males.
[2] Ohio Accountability Report. 2011-2012. U.S. Department of Education. http://cte.ed.gov/accountability/reports/report_Acct2_piv.cfm?state=OH&year=2011-2012
[235] "Career-Technical Education State Targets and Actual Performance for the Perkins IV Core Indicators: Secondary Level." Ohio Department of Education. http://education.ohio.gov/getattachment/Topics/Career-Tech/CTE-Performance-Data-and-Accountability/Perkins-Resources/CTE_PERFORMANCE_INDICATORS_State_Targets_Years_1-6_06142011_-1.pdf.aspx
[236] "State Profiles," Op. cit.

Six College Tech Prep Regional Centers also support CTE instruction. Centers act as liaisons "between high schools and colleges in creating opportunities for students to earn college credits while in high school."[237] Centers consult with participating institutions to develop high school-to-college pathways and ensure alignment of secondary CTE content with postsecondary programs.[238]

### *Career Clusters and Programs of Study*

Ohio offers 16 career clusters. Despite differences in nomenclature, the career clusters correspond to those established by the National Career Clusters Framework.[239] Ohio's career clusters include:

- Agricultural and Environmental Systems
- Arts and Communication
- Business and Administrative Services
- Construction Technologies
- Education and Training
- Engineering and Science Technologies
- Finance
- Government and Public Administration
- Health Science
- Hospitality and Tourism
- Human Services
- Information Technology
- Law and Public Safety
- Manufacturing Technologies
- Marketing
- Transportation Systems[240]

A 2011 inventory lists more than four dozen available pathways across the 16 career clusters.[241]

### *Postsecondary Partnerships*

Early College High Schools (ECHSs), located throughout the state, aim to graduate students with both a high school diploma and two years of college credits.[242] According to the KnowledgeWorks Foundation, "by including the completion of an associate's degree or the first two years of college in […] high school, ECHSs have the potential to improve high school

[237] "2014 Annual Report Summary – Ohio College Tech Prep." Ohio Department of Education. http://education.ohio.gov/getattachment/Topics/Career-Tech/College-Tech-Prep/FY14TechPrepAnnualReport_091114.pdf.aspx

[238] "Carl D. Perkins Act of 2006 – Consolidated Annual Report for State of Ohio – Fiscal Year 2011 (July 1, 2011 – June 30, 2012." Perkins Collaborative Resource Network for Program and Data Quality. p. 1. http://cte.ed.gov/Docs/CARNarrative/OH_narrative_2011-2012.pdf

[239] "Ohio Career Field Initiative." Ohio Department of Education, 2008. p. 1. http://education.ohio.gov/getattachment/Topics/Career-Tech/Career-Fields/CFInit.pdf.aspx

[240] Taken verbatim from: "Ohio Career Field Initiative," Op. cit., pp. 1-2.

[241] "2011 Ohio CTE Career Fields, Pathways, and Specializations." Ohio Department of Education, August 23, 2010. pp. 1-3. http://education.ohio.gov/getattachment/Topics/Career-Tech/Career-Fields/2011_OhioCTECareer-Fields-Pathways-Specializations.pdf.aspx

[242] "Ohio Early College High School Initiative." Knowledge Works Foundation, pp. 1, 3. http://www.inpathways.net/ECHS%20Initiative%20Overview.pdf

and college graduation rates, save money for families and taxpayers, and better prepare students for entry into high-skill careers."[243]

College Credit Plus will allow students to earn high school and college credits through dual enrollment programs.[244] Further, the Career-Technical Credit Transfer Initiative (CT)$^2$, a collaboration between the Ohio Department of Education and the Board of Regents, establishes "criteria, policies, and procedures to transfer agreed upon technical courses" from secondary CTE programs to state postsecondary institutions.[245] Current areas under development include Nursing, Engineering Technology, Medical Assisting, Information Technology, and Automotive Technology.[246]

[243] Ibid., p. 2.
[244] "College Credit Plus." Ohio Higher Ed. https://www.ohiohighered.org/college_credit_plus
[245] "Credit Transfer." Ohio Higher Ed. https://www.ohiohighered.org/transfer
[246] Ibid.

# APPENDIX

## CORE INDICATOR DEFINITIONS

**Figure A.1: Recommended Core Indicator Definitions, U.S. Department of Education**

| CORE INDICATOR | MEASUREMENT DEFINITION |
|---|---|
| **Academic Attainment in Reading/Language Arts** | **Numerator:** Number of CTE concentrators who have met the proficient or advanced level on the Statewide high school reading/language arts assessment administered by the State under Section 1111(b)(3) of the Elementary and Secondary Education Act (ESEA) as amended by the No Child Left Behind Act based on the scores that were included in the State's computation of adequate yearly progress (AYP) and who, in the reporting year, left secondary education.<br>**Denominator:** Number of CTE concentrators who took the ESEA assessments in reading/language arts whose scores were included in the State's computation of AYP and who, in the reporting year, left secondary education. |
| **Academic Attainment in Mathematics** | **Numerator:** Number of CTE concentrators who have met the proficient or advanced level on the Statewide high school mathematics assessment administered by the State under Section 1111(b)(3) of the Elementary and Secondary Education Act (ESEA) as amended by the No Child Left Behind Act based on the scores that were included in the State's computation of AYP and who, in the reporting year, left secondary education.<br>**Denominator:** Number of CTE concentrators who took the ESEA assessments in mathematics whose scores were included in the State's computation of AYP and who, in the reporting year, left secondary education. |
| **Technical Skill Attainment** | **Numerator:** Number of CTE concentrators who passed technical skill assessments that are aligned with industry-recognized standards, if available and appropriate, during the reporting year.<br>**Denominator:** Number of CTE concentrators who took the assessments during the reporting year. |
| **School Completion** | **Numerator:** Number of CTE concentrators who earned a regular secondary school diploma, earned a General Education Development (GED) credential as a State-recognized equivalent to a regular high school diploma (if offered by the State) or other State-recognized equivalent (including recognized alternative standards for individuals with disabilities), or earned a proficiency credential, certificate, or degree, in conjunction with a secondary school diploma (if offered by the State) during the reporting year.<br>**Denominator:** Number of CTE concentrators who left secondary education during the reporting year. |
| **Student Graduation Rates** | **Numerator:** Number of CTE concentrators who, in the reporting year, were included as graduated in the State's computation of its graduation rate as described in Section 1111(b)(2)(C)(vi) of the ESEA.<br>**Denominator:** Number of CTE concentrators who, in the reporting year, were included in the State's computation of its graduation rate as defined in the State's Consolidated Accountability Plan pursuant to Section 1111(b)(2)(C)(vi) of the ESEA. |
| **Placement** | **Numerator:** Number of CTE concentrators who left secondary education and were placed in postsecondary education or advanced training, in the military service, or employment in the second quarter following the program year in which they left secondary education.<br>**Denominator:** Number of CTE concentrators who left secondary education during the reporting year. |
| **Nontraditional Participation** | **Numerator:** Number of CTE participants from underrepresented gender groups who participated in a program that leads to employment in nontraditional fields during the reporting year.<br>**Denominator:** Number of CTE participants who participated in a program that leads to employment in nontraditional fields during the reporting year. |
| **Nontraditional Completion** | **Numerator:** Number of CTE concentrators from underrepresented gender groups who completed a program that leads to employment in nontraditional fields during the reporting year.<br>**Denominator:** Number of CTE concentrators who completed a program that leads to employment in nontraditional fields during the reporting year. |

Source: U.S. Department of Education[247]

[247] "Program Memorandum." U.S. Department of Education. http://www2.ed.gov/policy/sectech/guid/cte/perkinsiv/studentdef.doc

## CALIFORNIA STATISTICS

**Figure A.2: California Demographics, Funding Levels, and Funding Trends**

| CALIFORNIA DEMOGRAPHICS, 2011-2012 | |
|---|---|
| **Public school enrollment** | 6,202,862 |
| **Free or reduced-price lunch eligibility (%)*** | 53.8% |
| **CTE enrollment (%)** | 16.1% |
| **Postsecondary students enrolled in public or private not-for-profit two-year or less-than-two year institutions (%)**** | 54.7% |
| **PERKINS FUNDING, FY 2014** | |
| **Total Perkins funds received** | $122,943,598 |
| **Percentage distributed to secondary** | 51.4% |
| **Percentage distributed to postsecondary** | 49.6% |
| **NON-PERKINS FUNDING, 2011-2012** | |
| **State secondary funding** | Decreased |
| **State postsecondary funding** | Maintained |
| **Local secondary funding** | Decreased |
| **Local postsecondary funding** | Maintained |

*California data are unavailable for 2011-2012. This figure reflects free- and reduced-price lunch participation for 2010-2011.
**Fall 2012
Sources: National Center for Education Statistics and U.S. Department of Education[248]
National Association of State Directors of Career Technical Education Consortium[249]

**Figure A.3: California Core Indicator Performance (2011-2012)**

| CORE INDICATOR | TARGET MET | ACTUAL PERFORMANCE |
|---|---|---|
| **Academic Attainment in Reading/Language Arts** | Yes | 52.7% |
| **Academic Attainment in Mathematics** | Yes | 55.0% |
| **Technical Skill Attainment** | Yes | 89.6% |
| **School Completion** | Yes | 89.0% |
| **Student Graduation Rates** | Yes | 89.0% |
| **Placement** | Yes | 88.9% |
| **Nontraditional Participation** | Yes | 38.8% |
| **Nontraditional Completion** | Yes | 89.5% |

Sources: National Association of State Directors of Career Technical Education Consortium
U.S. Department of Education[250]

[248] [1] Elementary/Secondary Information System, Op. cit.
[2] Integrated Postsecondary Education Data System, Op. cit.
[3] "Generate Enrollment (CTE Participants) Report," Op. cit.
[249] "CTE in Your State," Op. cit.
[250] [1] Note: This source presents actual performance data disaggregated by demographic group. To determine overall performance across demographic groups, this table presents combined data for females and males.
[2] California Accountability Report. 2011-2012. U.S. Department of Education. http://cte.ed.gov/accountability/reports/report_Acct2_piv.cfm?state=CA&year=2011-2012

## SUMMARY STATISTICS

**Figure A.4: State Demographics (2011-2012)**

| STATE | PUBLIC SCHOOL ENROLLMENT | STUDENTS ELIGIBLE FOR FREE OR REDUCED-PRICE LUNCHES (%)* | CTE ENROLLMENT (%) | % POSTSECONDARY STUDENTS ENROLLED IN PUBLIC OR PRIVATE NOT-FOR-PROFIT TWO YEAR OR LESS-THAN-TWO YEAR INSTITUTIONS** | WEIGHTED DIFFERENCE FROM CALIFORNIA |
|---|---|---|---|---|---|
| **California** | **6,202,862** | **53.8%** | **16.1%** | **54.7%** | **0.0000** |
| **Texas** | 5,000,193 | 51.1% | 21.5% | 44.7% | 0.1908 |
| **Illinois** | 2,073,721 | 48.9% | 14.5% | 40.6% | 0.4078 |
| **Florida** | 2,668,113 | 57.6% | 12.8% | 7.0% | 0.4763 |
| **New York** | 2,702,568 | 49.4% | 6.1% | 25.4% | 0.4886 |
| **Georgia** | 1,685,016 | 58.6% | 18.6% | 26.8% | 0.4898 |
| **Tennessee** | 987,830 | 56.2% | 17.5% | 28.8% | 0.5207 |
| **Michigan** | 1,533,484 | 47.9% | 7.5% | 34.4% | 0.5456 |
| **Virginia** | 1,255,551 | 38.3% | 20.9% | 33.0% | 0.5625 |
| **Indiana** | 1,037,779 | 48.0% | 12.9% | 22.2% | 0.5673 |
| **Ohio** | 1,738,642 | 43.6% | 6.9% | 27.6% | 0.5691 |

Source: National Center for Education Statistics and U.S. Department of Education
*California data are unavailable for 2011-2012. This figure reflects free- and reduced-price lunch participation for 2010-2011.
**Numbers represent fall 2012 enrollment.

**Figure A.5: Perkins Funding and Distribution (FY 2014)**

| STATE | TOTAL PERKINS FUNDS RECEIVED | % DISTRIBUTED TO SECONDARY | % DISTRIBUTED TO POSTSECONDARY |
|---|---|---|---|
| **California** | **$122,943,598** | **51.4%** | **49.6%** |
| **Texas** | $92,014,058 | 70.0% | 30.0% |
| **Illinois** | $40,519,069 | 60.0% | 40.0% |
| **Florida** | $61,726,876 | 48.0% | 52.0% |
| **New York** | $51,368,505 | 52.0% | 48.0% |
| **Georgia** | $38,240,445 | 50.0% | 50.0% |
| **Tennessee** | $23,042,024 | 85.0% | 15.0% |
| **Michigan** | $37,280,167 | 60.0% | 40.0% |
| **Virginia** | $23,634,248 | 77.3% | 13.0% |
| **Indiana** | $24,843,250 | 64.0% | 36.0% |
| **Ohio** | $42,750,001 | 79.0% | 21.0% |

Source: National Association of State Directors of Career Technical Education Consortium

**Figure A.6: State and Local Secondary and Postsecondary Non-Perkins Funding Trends (2011-2012)**

| State | State Secondary Funding | State Postsecondary Funding | Local Secondary Funding | Local Postsecondary Funding |
|---|---|---|---|---|
| **California** | **Decreased** | **Maintained** | **Decreased** | **Maintained** |
| **Texas** | Maintained | Decreased | Maintained | Maintained |
| **Illinois** | -- | -- | -- | -- |
| **Florida** | Maintained | Decreased | Maintained | Increased |
| **New York** | -- | -- | Decreased | Decreased |
| **Georgia** | Decreased | Decreased | Decreased | Decreased |
| **Tennessee** | Maintained | Increased | Maintained | -- |
| **Michigan** | Maintained | Maintained | Maintained | Maintained |
| **Virginia** | Decreased | Decreased | Decreased | Decreased |
| **Indiana** | Maintained | Increased | Decreased | Decreased |
| **Ohio** | Maintained | Maintained | Maintained | Maintained |

Source: National Association of State Directors of Career Technical Education Consortium
--Data unavailable

**Figure A.7: Core Indicator Targets Met By Peer States (2011-2012)**

| State | Academic Skills-Reading/ELA | Academic Skills-Mathematics | Technical Skill Attainment | School Completion | Student Graduation Rates | Placement | Nontraditional Participation | Nontraditional Completion |
|---|---|---|---|---|---|---|---|---|
| **California** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** | **Yes** |
| **Texas**[251] | Yes | Yes | -- | Yes | Yes | Yes | Yes | Yes |
| **Illinois** | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| **Florida** | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| **New York** | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| **Georgia** | Yes | Yes | No | Yes | Yes | Yes | Yes | No |
| **Tennessee** | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| **Michigan**[252] | Yes | No | Yes | Yes | Yes | Yes | Yes | Yes |
| **Virginia** | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| **Indiana** | No | Yes | Yes | Yes | Yes | Yes | Yes | No |
| **Ohio** | Yes | Yes | Yes | Yes | Yes | Yes[253] | Yes | Yes |

Source: National Association of State Directors of Career Technical Education Consortium
--Data unavailable

[251] On page 22, Core Indicator Performance data for Texas are from the Texas Education Agency and pertain to 2010-2011.
[252] On page 43, Core Indicator Performance data for Michigan are from the Michigan Department of Education and pertain to 2012-2013.
[253] The NASDCTEc refers to this target as being met, even though the actual placement rate (86.6 percent, as reported by the U.S. Department of Education) is less than the state target rate (88.3 percent).

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