

Briefing Paper: Overview of Secondary Career & Technical Education

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Introduction

Career and Technical Education (CTE) helps middle and high school students explore career options while providing academic and technical skills. In Washington, every school district offers some CTE courses. In part because one credit of "Occupational Education" is a state high school graduation requirement, nearly every high school student takes at least one CTE course.

While some schools offer CTE courses for middle school students, the majority of CTE courses are offered to high school students. High school CTE courses are offered at both comprehensive high schools, as well as skill centers, which specialize in advanced CTE curricula (See more about skill centers below).

CTE programs and courses are overseen by the Office of the Superintendent of Public Instruction (OSPI). All CTE programs offered by school districts must be approved by OSPI and must meet OSPI's established standards. There are two categories of CTE courses¹:

- Exploratory Course - A course that includes application of academic learning standards in the context of preparing for living, learning, and working; foundational and occupational skills based on current industry standards; exploration of career options within the career cluster; and leadership and employability skills.
- Preparatory Course - A technically intensive and rigorous CTE course or sequence requiring mastery of occupation-specific skills, including the application of academic learning standards needed for a specific career, that leads to a certificate or credential necessary for employment or offers dual credit, and leads to workforce entry, apprenticeships, or postsecondary education in a related field.

CTE courses also fall into one of 16 career clusters, which are each a group of nationally-defined jobs and industries that are linked by skills or products. Each cluster has pathways that include a collection of courses and training opportunities to prepare a student for a given career.

Table 1 shows high school student enrollment in CTE courses in the 2009-10 school year, according to the 16 career clusters. Students may enroll in more than one career cluster in the same year, so counts are duplicated.

¹ *Statewide Strategic Plan for Secondary and Career and Technical Education*, Office of the Superintendent of Public Instruction, December 2012.

For the purposes of the Table:

- Participant: A student who has enrolled in one or more courses in any CTE program area.
- Concentrator: A student who has enrolled in two or more CTE courses above the exploratory level in a single cluster.²

Table 1: CTE Course Participants & Concentrators, By Career Cluster - 2009-10

Career Cluster	Participants		Concentrators	
	Counts	Percent of Participants	Counts	Percent of Participants
Agriculture & Natural Resources	33,689	8.2%	4,726	4.8%
Architecture & Construction	7,883	1.9%	2,083	2.1%
Arts, A/V Technology & Communications	67,165	16.4%	26,156	26.5%
Business & Administration	19,332	4.7%	5,239	5.3%
Education & Training	10,349	2.5%	4,888	5.0%
Finance	10,154	2.5%	2,859	2.9%
Government & Public Administration	2,147	0.5%	756	0.8%
Health Science	65,850	16.1%	10,280	10.4%
Hospitality & Tourism	11,021	2.7%	3,711	3.8%
Human Services	39,402	9.6%	7,289	7.4%
Information Technology	65,671	16.0%	10,919	11.1%
Law & Public Safety	6,563	1.6%	1,948	2.0%
Manufacturing	17,686	4.3%	4,821	4.9%
Retail/Wholesale Sales & Service	17,808	4.4%	4,458	4.5%
Science Research & Engineering	25,329	6.2%	5,314	5.4%
Transportation, Distribution & Logistics	9,474	2.3%	3,279	3.3%
Total	409,523	100.0%	98,726	100.0%

Office of Superintendent of Public Instruction, Washington State Report Card, SY 2009-10
Counts are duplicated: Students may have enrolled in more than one Career Cluster.

Skill Centers³

A skill center is a collaborative, multi-regional education center that provides students opportunities to receive specific training and hands-on experience in industry-defined CTE classes. Skill centers are regional partnerships among multiple school districts operated by a host district under a cooperative agreement. Skill centers provide education typically considered too specialized and expensive for individual high schools to provide.

² "CTE Stakeholder Report," Career and College Readiness, Office of Superintendent of Public Instruction, August 2013, <http://www.careerandcollegeready.com>.

³ All of the information regarding skills centers and CTE programs comes from the Office of Superintendent of Public Instruction's website <http://www.k12.wa.us/CareerTechEd/default.aspx>.

Under OSPI rules, there are four types of skill centers:

- **Core Campus**
This is a regional facility devoted only to CTE programs in which the majority of skill center students attend. There are 13 core campus skill centers
- **Branch Campus**
A branch campus offers three or more CTE programs at high schools or higher education facilities. There are 8 branches in the state with at least one in development.
- **Satellite Program**
A satellite program offers fewer than three CTE programs and is hosted by a core campus, but at a separate location. There are 20 satellite programs with at least one in development.
- **Single School District Skill Center**
This is defined as a school district with more than 12,000 students in grades 9-12 that offers skill center programs.

Attachment A shows a list of the various skill centers currently in operation. Attachment B contains a map of current skill centers.

State Funding for CTE

Most state funds to support K-12 education are allocated through the prototypical school funding formula. The formula uses assumptions about different types of staff (teachers, principals, counselors, custodians, aides, etc.) needed for a "prototypical" school with a certain number of students. The number of teachers is calculated based on an assumed class size. Elementary, middle, and high schools have different assumptions for class sizes and the number of students in the school. Additional allocations are provided for materials, supplies, and operating costs (MSOC), as well as district wide support and central office administration.

The funding formula generates one amount for a full-time equivalent (FTE) high school student, and an increased amount for a student enrolled in CTE. There is one level of enhancement for middle and high school CTE students, and a separate enhancement for CTE students in skill centers, as shown in Table 2.

The enhancement for CTE is largely due to a significantly increased allocation for MSOC on the assumption that CTE courses have higher costs for materials and supplies. Because much CTE instruction is hands-on, there is a smaller class size assumed.

Table 2: State Allocation for High School, CTE, and Skill Center FTE Students 2012-13⁴

	High School FTE (Grades 9-12)	CTE FTE (Middle & High)	Skill Center FTE
Total Statewide Average Allocation	\$4,946.04	\$5,840.35	\$6,305.44
MSOC Allocation	\$554.57	\$1,354.26	\$1,203.97
Class Size Assumption	28.7	26.6	22.8

Table 3 shows enrollment data by FTE student for the different CTE programs and levels.

Table 3: CTE Enrollment in All Programs 2009-2013 Full-Time Equivalent (FTE) Students

	All 9-12 FTE	High School CTE	Skill Center	Middle School	Total CTE	Percent Change in CTE Enrollment from Previous Year
2012-13	307,751	56,165	5,857	4,708	66,730	+3.5%
2011-12	309,597	55,502	4,788	4,187	64,477	+1.8%
2010-11	313,011	55,638	4,655	3,019	63,312	+1.8%
2009-10	314,318	55,768	4,258	2,193	62,219	+3.4%

Office of the Superintendent of Public Instruction, August 2013 CTE Stakeholder Report

Federal Funding & Requirements for CTE⁵

Federal funding for CTE at both the secondary and postsecondary levels is provided by the Carl D. Perkins Career and Technical Education Improvement Act of 2006 (Perkins Act). For 2011-12, the total Perkins Act funds received in Washington were \$17.5 million. Of this amount, 44 percent was distributed to secondary CTE programs while the rest went to post-secondary CTE.

The Perkins Act requires each state to have a plan that establishes performance targets for specified core CTE performance indicators. For secondary CTE, states must track and measure the following key performance indicators⁶:

⁴ Communication with OSPI Apportionment Office and House OPR Fiscal Staff, August 2013.

⁵ "CTE Funding," Workforce Training and Education Coordinating Board, <http://cteworks.careertech.org/state-profile/details/washington>.

⁶ *Carl D. Perkins Career and Technical Education Act of 2006*, Title 1 Career and Technical Education Assistance to the States, Part A, Section 113 Accountability. These are the four key Perkins performance indicators; there are others.

- Academic attainment in reading/language arts - percentage of CTE concentrators who have met the proficient or advanced level on the statewide high school reading and language arts assessment administered by the state.
- Academic attainment in mathematics - percentage of CTE concentrators who have met the proficient or advanced level on the statewide high school mathematics assessment administered by the state.
- Technical skill attainment - percentage of existing CTE concentrators who took and passed a program specific assessment designed by the industry.
- School Graduation Rates - percentage of CTE concentrators who graduated in the state's computation of its graduation rate.

Washington's performance targets and actual performance levels for 2009-10 are shown in Table 4 for the key performance indicators for CTE concentrators.

Table 4: Secondary CTE Perkins Act Key Performance Indicators 2009-10

	Performance Targets	Actual Performance Levels
Academic Attainment in Reading/Language Arts	74.30%	87.18%
Academic Attainment in Mathematics	62.40%	54.32%
Technical Skill Attainment	Data Not Provided	6.00%
School Graduation Rates	73.00%	42.17%

2009-10 Perkin's Report to Congress and OSPI's Washington State Report Card

Other CTE Programs

Tech Prep

Tech Prep is a cooperative effort between K-12 schools, community and technical colleges, and the business and labor community to develop applied integrated academic and technical programs.⁷ Tech Prep courses are CTE courses that are designated by a college to qualify for tuition-free college credit as well as high school credit. These courses are offered at the student's high school.

In order to earn college credit for a Tech Prep course, students must earn a "B" or better and apply to a local community and technical college to have the credit placed on their transcript. As Table 5 indicates, the number of students enrolled in Tech Prep-eligible courses is significantly higher than the number of students who eventually successfully earn dual credit for the course.

⁷ "Washington Tech Prep," Washington State Board for Community and Technical Colleges, <http://sbctc.edu/college/workforce/TechPrepbriefingApr2010.pdf>.

Table 5: Tech Prep Enrollments and Dual Credit

	2010-11	2011-12
Tech Prep Course Enrollments <i>(duplicated student count)</i>	203,324	193,102
Tech Prep Students <i>(unduplicated count)</i>	126,440	120,539
Tech Prep Students Eligible for College Credit	118,252	115,110
Tech Prep Students Receiving College Credit	35,635	28,946

High School Dual Credit Participation Summary, Washington State Report Card, OSPI and Dual Credit Programs Report, OSPI (2012)

CTE Student Leadership Organizations

CTE student leadership organizations are independent national organizations with local affiliates intended to provide CTE students with opportunities to learn and exercise both technical and leadership skills through regional, state, and national competitions. Different schools have different organizations available to students, but there are eight recognized organizations in Washington:

- Distributive Education Clubs of America (DECA)
- Future Farmers of America (FFA)
- Family, Career and Community Leaders of America (FCCLA)
- Future Business Leaders of America (FBLA)
- Health Occupation Student Association (HOSA)
- SkillsUSA
- Technology Student Association (TSA)
- Career and Technical Sports Medicine Association (WCTSMA)

CTE Educator Certification⁸

Teachers

As with other educators in Washington, CTE teachers must be state certified by the Professional Educator Standards Board (PESB) with an appropriate endorsement in CTE. CTE teachers may receive their initial certification by one of two pathways:

College/University Route: A candidate must have a bachelor's degree from a regionally accredited college or university, complete a state-approved teacher preparation program, demonstrate competence in one or more of the endorsement areas, and have requisite experience of 2,000 documented hours of paid occupational experience to teach within a broad CTE area. If any of the 2,000 hours are more than six years old, 300 hours must be within the past two years.

There are four CTE endorsement areas under the College/University Route:

- Agriculture Education
- Business & Marketing Education

⁸ All of the following information comes from Office of Superintendent of Public Instruction's website <http://www.k12.wa.us/certification/CTE/NotCertified.aspx>.

- Family & Consumer Science Education
- Technology Education

Table 6: CTE Endorsement Areas Offered Through College/University Route Certification

State-Approved Teacher Preparation Program	CTE Endorsement Areas
Washington State University	Agriculture Education Family & Consumer Sciences Education
Central Washington University	Family & Consumer Sciences Education Technology Education
Eastern Washington University	Business and Marketing Education
Seattle Pacific University	Family & Consumer Sciences Education

Business/Industry Route: A candidate with extensive experience who completes a PESB-approved program for the business and industry route may teach in one specific specialty area. Specialty areas are more narrowly defined than a regular CTE endorsement. For example, a Business/Industry Route teacher might only be certified to teach Horticulture as opposed to the broader array of Agriculture Education topics. The broad categories of Business/Industry Route specialty areas are:

- Agriculture (ex: Horticulture, Natural Resources, Veterinarian Assistant)
- Business (ex: Legal Administrative Services, Medical Administrative Services)
- Marketing (ex: Fashion Merchandising, General Sales Operations)
- Health (ex: Health Informatics, Dental Assisting, Sports Medicine)
- Human Services (ex: Cosmetology, Careers in Education, Culinary Arts)
- Skills & Technology Sciences (ex: Construction Trades, Automotive Technology, STEM Technology)

Extensive experience means documentation of 6,000 hours of paid occupational experience. At least 2,000 hours must be within the past six years. If any of the 2,000 hours are older than six years, 300 hours of the experience must be within the past two years.

Business/Industry Route programs are offered by:

- Central Washington University Continuing Education Office
- Eastern Washington University
- Southwest Washington Consortium
- Bates Technical College
- South Seattle Community College

Table 7 shows the number of CTE endorsements held by teachers employed by public schools in 2012-13. Some teachers may hold more than one endorsement.

Table 7: CTE Teacher Endorsements 2012-13⁹

College/University Route Endorsement Areas		Business/Industry Route Endorsement Areas	
Agriculture Education	239	Agriculture	267
Business & Marketing Education	857	Business	929
Family & Consumer Sciences Education	682	Marketing	411
Technology Education	309	Health	401
		Human Services	297
		Skills & Technology Sciences	1,928
Total Endorsements	2,087	Total Endorsements	4,233

*Office of the Superintendent of Public Instruction, Student Longitudinal Data System (SLDS)
CTE Endorsement Types Employed for School Year Categories Coded by OPR*

CTE Director Certificate

A candidate must have 30 quarter credits of CTE educator training or equivalent experience, including a course in supervision and administration of CTE. In addition, an applicant must have had three years of experience as a certified CTE supervisor, CTE instructor, CTE counselor, or Occupational Information Specialist.

CTE Counselor

CTE counselor certification requires a valid educational staff associate/counselor certificate or completion of a counselor education program from an institution of higher education. In addition, a CTE counselor certification requires a course in the philosophy of CTE education and two years of varied work experience in the last ten years other than teaching or counseling experience (such as experience in placement and evaluation of workers in business, industry, agriculture, education, or government service).

Occupational Information Specialist

This certification requires three years of full-time paid occupational experience, two years must have been in the last six years, or two years of CTE teaching experience in an approved CTE program.

Table 8: Other CTE Educator Certifications 2012-13

CTE Certifications	Number
CTE Director	197
CTE Counselor	53
Occupational Information Specialist	63

*Office of Superintendent of Public Instruction,
CTE Endorsement Types Employed for School Year*

Attachments:

- Attachment A: List of Skill Centers & Campuses
- Attachment B: Skill Center Map

⁹ List does not include 186 specific endorsements where no broad endorsement area could be matched from the data set.

ATTACHMENT A: SKILL CENTER CAMPUSES (Spring 2013)

13 Core Campuses
Clark County
New Market Vocational
North Olympic Peninsula
NW Career & Technical Academy
Pierce County
Puget Sound
Sno-Isle Technical
Newtech
Tri-Tech
WA Network of Innovative Careers
Wenatchee Valley Technical
West Sound Technical
Yakima Valley Technical

8 Branch Campuses
Aberdeen HS
Spokane Valley Technical
Walla Walla CC
Digi-pen Bellevue HS
Columbia Basin
Sunnyside
Rainier Beach HS

20 Satellites
ESD 112 Vancouver
Forks HS Sequim HS
Anacortes Meridian HS
Lincoln HS Beauty & Barber College
Seahurst Park Seattle Area Pipe Trades
Colville
Mount Si HS Issaquah HS Bothell HS Mercer Island HS Snoqualmie Valley Hospital
Professional Beauty School Elite Academy Carpentry Training Center West Seattle HS

