



Learning that works for Wisconsin

CTE[™]



Career and Technical Education



Tony Evers, PhD

**State Superintendent of
Public Instruction**

Career and Technical Education (CTE) provides exceptional experiences for students through career pathways and strong business partnerships. Students gain the knowledge and skills today's employers demand of our high school graduates. In fact, CTE students have a higher graduation rate than their non-CTE peers moving us closer to the goal of Every Child A Graduate College and Career Ready. I am a strong believer that Career and Technical Education has significant value for all students.

CTE adds to our students' education and success. As we strive to prepare every Wisconsin student to be college and career ready, CTE provides our greatest collective opportunities for creating a skilled, knowledgeable, and productive future workforce. CTE teachers are well equipped to know what and how kids should learn. Through standards, instruction and assessment, the value of CTE to students' academic achievement is evident as illustrated by data in this brochure. CTE students have tremendous opportunities such as earning college credit through dual enrollment, acquiring career skills through industry certifications, and youth apprenticeships. The core knowledge and technical skills developed through integrated and work-based learning result in deeper and more relevant connections to the issues and challenges facing our local, regional, and global economy.

Career and Technical Education should be part of any comprehensive effort to improve student achievement and success and prepare college and career ready graduates.

Overview of Brochure

This brochure highlights the quality components of Career and Technical Education to serve as a resource for school leadership.

What you will find in this brochure:

The Quality Components of Career and Technical Education

The Implementation of the Quality Components of Career and Technical Education

Wisconsin Career and Technical Education Data



The Quality Components of Career and Technical Education

Career and Technical Education (CTE) programs prepare individuals for a wide range of careers that reflect the contemporary workplace. The diagram below depicts the three main components of a quality Career and Technical Education program and how they, along with supporting components described on the next page, coalesce to achieve college and career readiness.

Academic & Technical Skills

CTE programs incorporate rigorous academic and technical standards. CTE equips students with skills necessary for successful transition to postsecondary education or work and promotes life-long learning in a global society.

Leadership and 21st Century Skills through Career and Technical Student Organizations (CTSOs)

CTE programs support skills such as communication, critical thinking, problem solving, entrepreneurship and leadership through CTSOs. CTSOs, as an intra-curricular activity, incorporate service, leadership, and competitive activities that enhance students' classroom experiences. Direct ties to community, education, and the workforce are essential to every CTSO.

Work-Based Learning

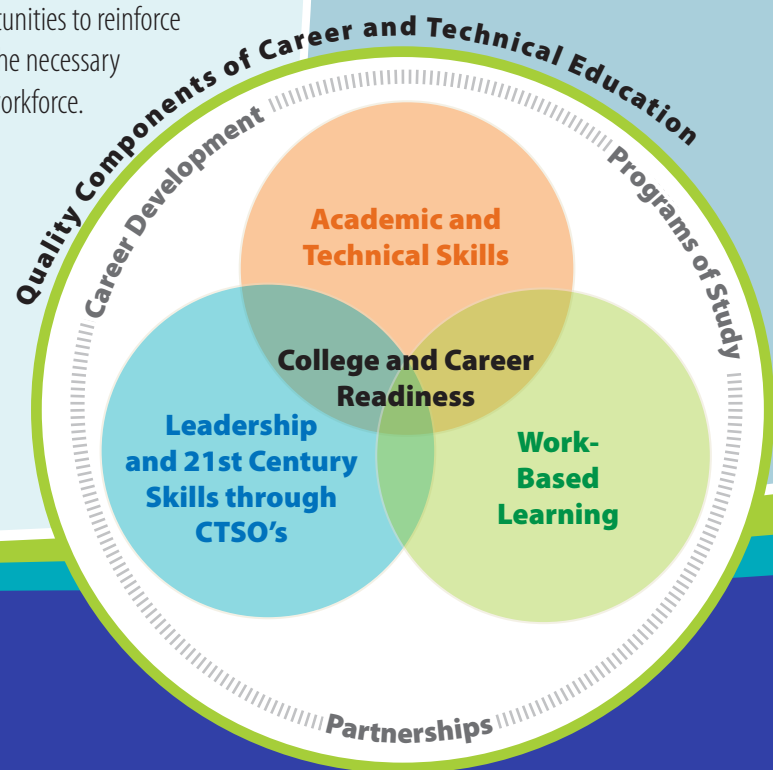
CTE programs allow for learning to take place in multiple settings that result in students earning a local, state, or industry credential. Work-based learning programs enhance business/education partnerships, provide students with opportunities to reinforce skills they learn in the classroom in a work-setting, and teach the necessary employability skills and work behaviors to be effective in the workforce.

CTE is:

- critical to ensuring that the United States leads in global competitiveness.
- actively partnering with employers to design and provide high-quality, dynamic programs.
- preparing students to succeed in further education and careers.
- delivered through comprehensive programs of study aligned to the National Career Clusters framework.
- a results-driven system that demonstrates a positive return on investment.¹

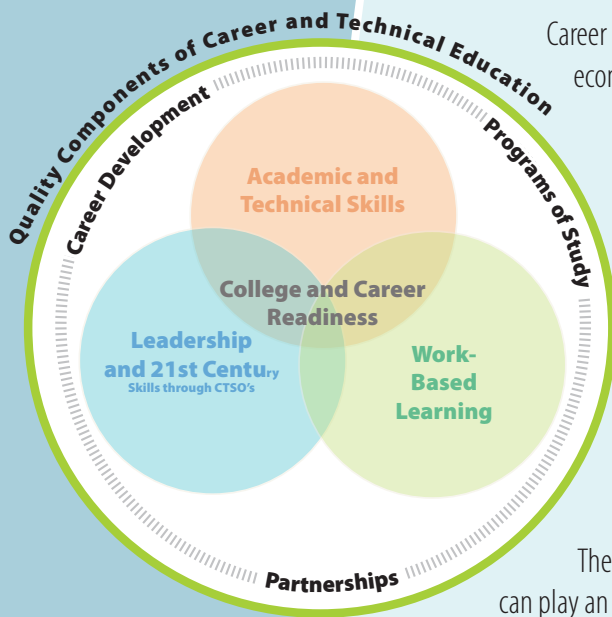
Achieving College and Career Readiness

College and Career Readiness is at the core of the diagram. CTE provides quality work-based learning programs, relevant academic skills, and the employability skills and workforce behaviors necessary for post-secondary education and careers. Through this comprehensive approach, students in CTE build a rich portfolio of knowledge and skills to achieve their personal, educational, and career goals.



Supporting Components that Define Career and Technical Education

Career and Technical Education (CTE) plays a major role in addressing the workforce and economic needs.



CTE has grown and evolved to become a focus in schools, the workforce, and government as a way to grow the economy. To support quality CTE programs it is critical to foster partnerships, implement Programs of Study and promote career development through academic and career planning.

Partnerships

Approximately 20% of Wisconsin's high school graduates go directly into the job market after high school.² The opportunity for students to become significantly engaged in activities that develop employment skills and achieve higher academic success makes business partnerships invaluable.

There are a variety of ways to bring education and business together. Each stakeholder can play an important role in developing or implementing effective partnerships. If employers, educators, parents, members of labor and community organizations and administrators have a shared concern about a real problem that can best be addressed by organizations from different sectors working together, then a partnership can begin.

The compelling reasons to start business and education partnerships rest in the benefits for all of the stakeholders involved.

1. **Students** benefit from the work-based learning opportunities, the enriched classroom experiences and the ability to be mentored by business people.
2. **Educators** strive to improve and expand curriculum to help students better meet the needs of the job market and post secondary education.
3. **Administrators** create a forum for education and business to share ideas while maintaining the integrity of education while meeting the needs of industry.
4. **Partners** provide curriculum input, increase future workforce productivity, provide incentives for technology and equipment along with other contributions, and improve student attitudes toward work.
5. **Community** gains awareness of partnerships through publicity that can create goodwill and confidence in the educational system.³

Successful partnerships use strategic planning and evaluate progress. They also acknowledge and confront problems to build stronger relationships that benefit schools, businesses, and communities.⁴

Programs of Study: Career Clusters and Pathways

The nationally adopted 16 Career Clusters provide a context for learning the skills specific to a career and provide a structure for organizing curriculum offerings and focusing coursework with a common theme. Within the clusters are 79 Pathways that lead to Programs of Study. These Programs of Study along with related content standards form a foundation for accountability. They are designed to produce higher levels of achievement in a number of measurable arenas, including academic and technical attainment, high school completion, post-secondary transitions to career and education, and attainment of a formal post-secondary credential. They also contribute to increased student proficiency in vital areas such as creativity and innovation, critical thinking, and problem solving. CTE brings students, educators, and employers together to develop and strengthen the relationship between what is being taught in the classroom and its application in the workplace. Having a skilled workforce and a vibrant economy depends on CTE programs that can deliver high quality education and training.



Career Development: Academic and Career Planning

In order for students to determine and achieve their personal and career goals, they need ongoing guidance and mentoring, access to current and relevant career information, as well as appropriate planning tools. A continuous process of self and career exploration—with input and influence from parents, teachers, and others—should lead to an academic and career plan that is dynamic, and provides a foundation for making education and career related decisions. That plan should include a student's academic, personal/social, and career goals while capturing the skills, knowledge, and values needed to attain those goals. The plan should also reflect accurate and up-to-date labor market information to serve as a context for applying the student's passions, aptitudes, strengths, and dreams.

Harvard Graduate School of Education

"CTE students are challenged with a rigorous curriculum which is based in areas of students' strong interest."³ Research has shown that states that integrate academic standards into CTE courses show improved academic achievement. Wisconsin is no exception to this rule. With academics embedded in CTE curriculum, WI students have additional opportunities to learn and apply core academic skills that their non-CTE counterparts do not have.

Career and Technical Education should be at the forefront of career decision making:

- CTE **blends both academics and career education** into a practical program for workforce preparation, elevating the level of rigorous, challenging, and applicable coursework leading to more informed preparation.
- CTE **promotes a wide variety of postsecondary options**; it helps individuals choose and recognize pathways to the most successful level and type of training to meet their future goals in postsecondary education, military, or work.
- CTE creates an understanding of the **need for life-long learning and career development**.
- CTE **provides opportunities to develop 21st Century and employability skills** with exposure to work and mentoring from employers as well as connections to postsecondary education.
- CTE **creates a positive, thoughtful learning environment for self-discovery, innovation, and leadership** to promote lifelong career satisfaction and success.
- CTE **recognizes the diverse needs, behaviors, backgrounds, environments, and preferences of students** by creating an approach for individual guidance and preparation for goals, plans, and dreams.

CTE is **dynamic, flexible, and responsive to the changes and advances of technology, education, the workforce, and the economy** by incorporating methods, ideas, and resources to keep CTE relevant and contemporary.⁵



The Implementation of the Quality Components of CTE

Academic and Technical Skills

Academic and Technical Skills

Career and Technical Education courses and programs provide students with choices and opportunities not otherwise available—including those that come with increased academic performance. Though CTE courses and programs are career focused, it doesn't mean that students' options after high school are limited to one career area. Instead, students who choose to enroll in CTE coursework actually increase their post high school options because they have learned to apply their core academic knowledge and skills through multiple experiences within their career interests, and can transfer those skills to new experiences.

As part of raising student achievement and preparing students for college and career readiness, State Superintendent Evers adopted the Common Core Literacy Standards for All Subjects (Disciplinary Literacy) at all grade levels. Literacy is a statewide initiative for all students. These standards present a tremendous opportunity to impact CTE content and practices.

Disciplinary literacy is learning content by focusing on the way reading, writing, speaking and listening, and language are used in the discipline. It is being able to read, write, listen, speak, and think in a way that is meaningful within the context of a given field. The major emphasis of this initiative is to provide teachers with tools to support students' use of content specific texts for learning. Close reading, text-dependent questions, and text-dependent tasks are at the core of this work.

In addition, Wisconsin's equivalent graduation policy provides districts the opportunity to expand options available to students to meet high school graduation requirements through "equivalent courses." CTE courses that prove to have sufficient academic content can be approved for equivalent credit for the purposes of meeting high school graduation requirements.

High school students in CTE . . . "are often more willing to engage in reading and writing within these courses. Job-specific vocabulary and authentic work situations can inspire students to apply themselves to literacy tasks that lack meaning in other contexts."⁶



Academic and Technical Skills



"There are so many options that allow you to go into a variety of careers... certified nursing assistant, nursing, biomechanics, food engineering... talk to your CTE teacher or counselor to achieve what you want to be."

Austin Brandt,
Student and future paramedic
Emergency Medical Technician (EMT)
Madison College

High School College Credit Opportunities

A great opportunity for Career and Technical Education students is the ability to earn college credit while still in high school.

There are various opportunities for students within the CTE program that include:

- Advanced Standing agreements between a high school and a college
- College-Level Examination Program (CLEP) tests
- Dual Credit/Dual Enrollment Programs such as Youth Options and Transcribed Credit
- Advanced Placement courses
- International Baccalaureate (IB)

A key benefit is giving high school students a head start on their college education without, in the case of many dual enrollment programs, the student paying college tuition. Another benefit is allowing high school students to experience the rigor and nature of college-level coursework and expectations before being fully immersed in college life.

To achieve its greatest impact, participation in any of the above listed programs should occur as part of a Program of Study. Students should develop a comprehensive plan working closely with their parents and education stakeholders so that the courses for which students receive college credit are related to identified personal, academic, and career goals.

Did you Know?

- 18,252 high school students earned 62,975 technical college credits through programs other than Youth Options in 2011.
- There were nearly 1,300 technical college transcribed credit agreements in 275 Wisconsin high schools in 2011.
- There were over 2,600 technical college advanced standing agreements in 302 Wisconsin high schools in 2011.
- At \$113 per technical college credit, students are adding value to their high school education.
- Each 1-, 2-, or 3- credit high school dual enrollment course equals approximately 135 hours of time saved in college.

Career & Technical Student Organizations Provide Opportunities

Wisconsin's Career and Technical Education programs are available in most Wisconsin school districts and incorporate an important component of CTE called the Career and Technical Student Organization (CTSO).

What is a CTSO?

A CTSO is a basic component of career and technical education programs that support and enhance related school-based and work-based learning. They provide value to students through various opportunities that allow them to showcase their skills and knowledge. CTSOs are found in middle, junior and senior high schools throughout Wisconsin.

Recent research shows that CTSOs provide students with skills that are directly applicable to the real world.

What are the benefits of CTSOs?

- Enable students to achieve high academic and occupational standards;
- Develop meaningful business partnerships;
- Link school-based learning to the real world of work, community, and family;
- Motivate youth to become better students and productive citizens;
- Develop school and community leaders; and
- Enhance student self-esteem and self-confidence.

**Leadership
and 21st Century
Skills through
CTSO's**

"Being involved in a CTSO has been one of the greatest influences in my life so far. Throughout these years, Health Occupations Students of America (HOSA) has led me to not only learn about the healthcare profession but also myself. It has pushed me towards a potential far beyond what I imagined. By witnessing and learning directly from healthcare professionals, I have discovered a career which I love.

The most empowering aspect of a CTSO is that students are able to share their dedication to their future careers with other students.

I wholeheartedly believe in CTE and CTSOs. The transformation I have experienced and have seen fellow students experience is absolutely endearing. I have become the person I once only dreamed of being."

Nzuekoh Nchinda
Oak Creek High School
Oak Creek, WI



CTSO Facts in Wisconsin

84% of all high schools have at least one CTSO

56% of those high schools have at least two CTSOs

31% of those have at least three CTSOs

26% of those high schools have four or more CTSOs



Value of Work-Based Learning in Wisconsin

Work-based Learning

Wisconsin students have many opportunities to learn about the world of work. Students who participate in school-supervised work-based learning have additional opportunities to gain employability skills and occupational skills related to their high school courses. This type of learning reinforces the connection between work and school, provides an opportunity for meaningful contact with adults/mentors, improves students' chances for successful employment as young adults and helps solidify career interests.

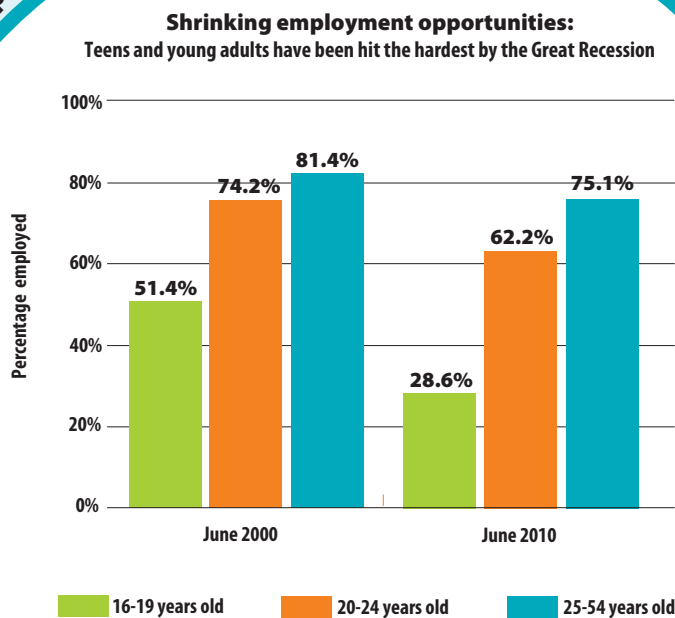
Work-based learning options encompass a spectrum of opportunities ranging from job shadowing at any grade level to state or local co-ops, youth apprenticeship, or other supervised work experiences including school-based enterprises or experiences that lead to industry certification. Regardless of the options implemented within a school, all have value in helping students become career ready. With the newly revised Youth Leadership and Employability Skills Certificates, students are able to earn a state credential that highlights their transferable skills.

"In effect, the President has suggested that every American earn a minimum of two pieces of paper – a high school diploma, and a degree or industry-recognized certification. In the years ahead, young adults are likely to need those two credentials to secure a good job. That will become the ticket to success and a positive future."⁷

Arne Duncan
Secretary of Education



Shrinking Employment Opportunities



"The percentages of teen and young adults who are working are now at the lowest levels of employment recorded since the end of the 1930's depression."⁸

Now more than ever, schools need to ensure all students have exposure to work-based learning opportunities whether that leads to a formal state certificate or a local credential. Bridging the gap between the current employment reality and preparing students to be career ready means that schools, business and industry, and communities must unite together to provide diverse work-based learning opportunities for all students before they graduate from high school.

"Employment in the teen and young adult years can have a very positive impact on future prospects for employment and earnings. Teens who have good high school work experiences are more likely to stay in school, graduate, and adopt ambitious goals."⁹



Brian Johnson
Sr. Vice President
Michels Corporation

When I was in high school I learned that there was a Career and Technical Student Organization called Future Business Leaders of America (FBLA). The FBLA advisor encouraged me to participate in our local chapter and take a second accounting class, as well as courses in business communications and business law. FBLA gave me an opportunity to experience leadership, and the business courses in high school lit the fire in my belly for business. They inspired me to go on to college, advance my leadership and obtain a business degree. Simply put, if not for the business and information technology courses in high school, the caring teachers, and the leadership training, public speaking and emotional intelligence I gained through FBLA and business education, I would never have excelled as quickly or made it as far as I have in business.

Wisconsin Career and Technical Education Data

CTE prepares individuals for a wide range of careers that reflect the modern workplace. High quality CTE programs incorporate rigorous academic and technical standards, as well as critical workplace skills such as problem solving, communication, and teamwork to ensure college and career success for its students. CTE provides the evidence that demonstrates a positive return on investment for the students it serves.

The chart below illustrates the 2010-2011 enrollments by occupational area at the junior and senior grade levels for districts participating in the Carl D. Perkins Career and Technical Education Improvement Act of 2006. The Multiple Program Areas indicate student involvement in more than one occupational area.

District Participation of Juniors and Seniors in Career & Technical Education

Occupational Area	Male	Female	Total
Agriculture and Natural Resources	8,395	5,641	14,036
Business and Information Technology	23,132	20,200	43,332
Family and Consumer Science	14,101	20,840	34,941
Health Science	2,093	6,584	8,677
Marketing	5,676	4,444	10,120
Technology and Engineering	29,287	9,404	38,691
Multiple Program Areas	24,142	19,774	44,916

Source: DPI CTEERS¹⁰

Did you know?

- 89,000 of 138,500 11th and 12th graders participate in CTE
- 2 out of 3 high school students participate in CTE every year (since 2004)

Career and Technical Education has historically emphasized career equity through the promotion of an inclusive classroom climate; quality curriculum and instruction; role models and mentors; and more purposeful messaging from school counselors.

CTE contributes to students being college and career ready. Its essential role engages students and makes learning relevant. With high schools at the heart of school reform, Career and Technical Education has emerged as a critical, high-quality option to prepare young people for 21st Century careers.



"Wisconsin students thrive when they have the experiences to make classroom learning relevant. When businesses and education partner we can fill the skills gaps in our high growth industries. CTE makes a difference for student learning and engagement in Wisconsin!"

**Jim Morgan, President
Wisconsin Manufacturing
and Commerce Foundation**

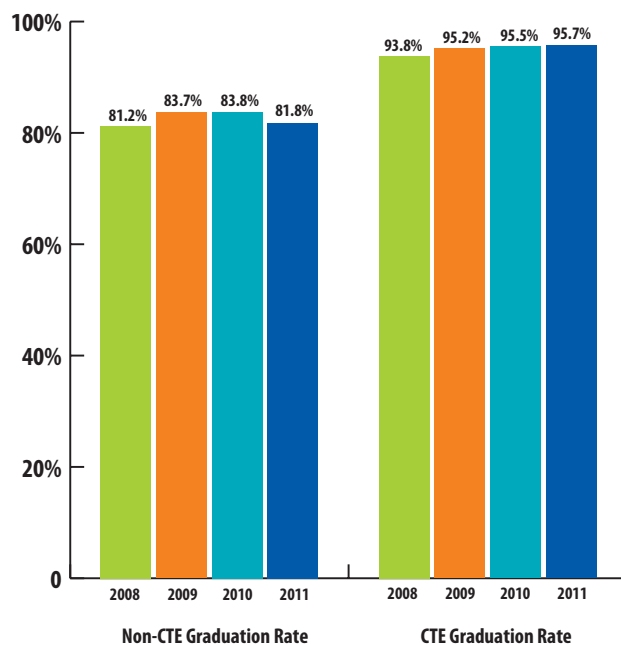
The "college for all" philosophy does not mean that all students need a bachelor's degree in order to earn a family-sustaining wage. According to the Harvard School of Business Pathways to Prosperity report, "a narrowly defined college for all goal—one that doesn't include a much stronger focus on career-oriented programs that lead to occupational credentials—seems doomed to fail." The goal is to show students a transparent connection between their program of study and tangible opportunities in the labor market so that they can make informed decisions upon high school graduation.¹¹

Career & Technical Education Improves Graduation Rates

CTE Improves Retention and Graduation

- Nearly two-thirds of students in grades 6–12 participate in career and technical education courses in fields like manufacturing, agriculture, business and information technology, family and consumer science, health science, marketing, and technology and engineering.
- Of the 12th grade (CTE) concentrators (defined as three or more CTE courses in a student's chosen pathway), 93% graduated compared to 78% of non-CTE participants.
- Of the CTE concentrators who graduated, 97% have successful outcomes nearly nine months after graduation (23% employed, 73% further education, 1% other).

CTE Students Have a Higher Graduation Rate



Secondary students who graduate with a CTE concentration are two and a half times more likely to be employed while pursuing post secondary education than are “college prep” students, according to the Southern Regional Education Board (SREB).¹²

Analysis of Career and Technical Education Enrollment Reporting System (CTEERS) data indicates that CTE participants had a 12.7% higher graduation rate than non-participants.

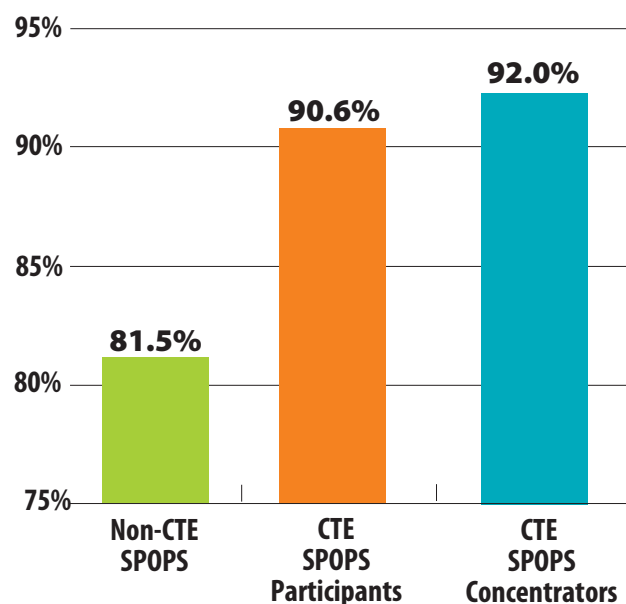
Graduation rates are higher for students in all special populations groups who enroll in career and technical education classes. According to 2005–2010 CTEERS data, nearly 40% of all special population students enroll in career and technical education, thus improving their knowledge and technical skill attainment and increasing their success rate for high school graduation.

Special Populations (SPOPS) include:

- students preparing for nontraditional training and employment;
- single parents;
- economically disadvantaged students;
- individuals with disabilities;
- students with limited English proficiency; and
- academically disadvantaged students.

The benefits of CTE to special populations, illustrated by the data show special population students enrolled in CTE courses graduate at a rate of 90.6% vs. 81.5%. Those students who took three or more CTE courses (CTE Concentrators) graduated at the even higher rate of 92%.

Special Populations Graduation Rate 2011



Endnotes

1. Adapted from <http://www.celebratecareers.com/documents/CTEImportance.pdf>.
2. Wisconsin CTEERS Concentrator Graduate Follow Up Report. 2010. www.cte.dpi.wi.gov/cte_veersbf.
3. Albrecht, B., Creating Business and Education Partnerships. 2002. Wisconsin Department of Public Instruction. Bulletin No. 03050.
4. <http://www.ncrel.org/sdrs/areas/issues/envrmnt/stw/sw6oeri.htm>.
5. Adapted from <http://www.celebratecareers.com/documents/CTEImportance.pdf>.
6. William C. Symonds, Robert B. Schwartz and Ronald Ferguson, February 2011. Pathways to Prosperity: Meeting the Challenge of Preparing Young Americans for the 21st Century. Report issued by the Pathways to Prosperity Project, Harvard Graduate School of Education.
7. Duncan, Arne. Remarks prepared for U.S. Secretary of Education Arne Duncan. Rigor, Relevance and the Future of CTE. April 19, 2011
8. https://www.actonline.org/uploadedFiles/Publications_and_Online_Media/files/Literacy_Issue_Brief.pdf.
9. Ibid
10. Career and Technical Education Enrollment Reporting System. 2010. http://cte.dpi.wi.gov/cte_veersbf.
11. William C. Symonds, Robert B. Schwartz and Ronald Ferguson, February 2011. Pathways to Prosperity: Meeting the Challenge of Preparing Young Americans for the 21st Century. Report issued by the Pathways to Prosperity Project, Harvard Graduate School of Education.
12. Ibid

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