

Minnesota Frameworks for Career and Technical Education

Minnesota Department of Education
Career and Adult Education
1500 Highway 36 West
Roseville, Minnesota 55113

Preface

This framework provides tools for determining how national and industry standards align with goals and curriculum in Career and Technical Education (CTE) programs. The examples, alignment charts and ideas for activities contained in this document are intended to encourage districts, sites and teachers to use, adapt and develop their own best practices when implementing national and industry standards and applying academic knowledge and skills to practical situations in the following five CTE areas:

- Agriculture and Food Science
- Business and Marketing
- Family And Consumer Sciences and Service Occupations
- Health Occupations
- Trades, Technology and Industry

Several Minnesota career and technical education teachers and administrators were identified to collaborate and develop a framework that would address the unique circumstances surrounding the application, reinforcement and enrichment of academics into the five CTE programs. The voices of teachers are woven throughout this framework, creating a practice-based resource.

We would like to thank everyone who contributed to the “Framework for Integrating Minnesota Graduation Standards and Career and Technical Education.”

Agriculture and Food Sciences

Susan Anderson, Forest Lake
Kathleen Brandt, Forest Lake
Joel Larsen, Department of Education
Keith Olander, Long Prairie/Grey Eagle
Kristi Ruen, Rushford-Peterson
Leah Schwachtgen, Montevideo
Tracy Tebben, New London/Spicer
Amy Thofson, Madelia High School
Mike Thofson, Lake Crystal/Welcome/Memorial
Justin Williamson, Martin County West

Business and Marketing

Karen Brettingen, Eden Prairie
Tonya DeWing, Stillwater
Peggy Ehlert, Duluth
Jim Eisenreich, Eden Prairie
Jean Kyle, Department of Education
Kathy Larson, Waseca
Nancy McAfee, Watertown
Beverly O'Connor, Marshall
Ellen Paxton, St. Paul
Mary Stromberg, Anoka

Family and Consumer Sciences

Kay Malme, Northwest
Shirley Deno, North Central
Maryann Rot, Northeast
Marlene Schiotz, West Central
Jayne Oches, West Central
Jane Mastroianna, Central
Joan Proza, East Central
Marcine Elder, Southwest
Michelle Lindquist, South Central
Jan Kellner, St. Paul
Cherry Kramer, Southeast
Lee Anderson, Metro

Service Occupations

Cherry Kramer, Southeast
Jan Kellner, St. Paul
MaryJohnson, South St. Paul
Joan Proza, Braham

Health Occupations

Donna Bestland RN, Browerville
Marge Connelly, Rochester
Jayne Johnson RN PHN, Little Falls
Jenny Kettner RN, Springfield
Sonya McNamara, Mankato
Vicki Kyarsgaard BSN RNC, Corcoran
Lenore Miller MLT, COLT, AMT, Buffalo
Mike Mitchell M.Ed, Department of Education
Joan Proza, Braham
Margaret Ratai PHN, LSN, Mountain Iron
Sheila Tippie RN, Eden Prairie
Beth Wheeler RN, Thief River Falls

Trades, Technology and Industry

Keith Anderson, Chippewa Middle School
Mike Lindstrom, Anoka Public Schools
Jim Mecklenburg, Department of Education
Marlys Bucher, Department of Education

Additional Contributors

Les Gunderson, Perham
Jane Holmberg, Intermediate District #287,
Jennifer Hetland, Intermediate District #917,
Jessica Wiley, Intermediate District #916,
Pam Ludvigsen, Intermediate District #287
Barbara Wojcik, Intermediate District #916
Christa Treichel, Intermediate District #287
Diane Miller, Department of Education
Tom Strom, Department of Education
Dan Smith, Department of Education
Barbara Habhegger, Editor BBH, Consulting

Chapter One

Frameworks for Career and Technical Education

Table of Contents

What Is Career and Technical Education?.....	3
What Is Unique About Career and Technical Education?.....	4
Standards in the World of Work.....	5
Standards in the World of Education	6
Integrating Workplace and Education Standards into CTE Programming.....	7
Work-Based Learning.....	8
Career Planning.....	11
Career Planning Model.....	12
Career Fields.....	13
Career Clusters.....	14
Career Planning Resources.....	15
Tech Prep Overview.....	16
Minnesota Tech Prep Expenditure Guidelines.....	17
Perkins Funding	18
Student Organizations.....	19

What Is Career and Technical Education?

Career and Technical Education (CTE) is both a philosophy of education and a grouping of content disciplines that align most closely with the philosophy. The evolution of CTE parallels changes in society and education. The original vision of preparing workers for entry-level jobs in business and industry has changed dramatically (Sarkees-Wircenski and Scott, 1995). Today CTE focuses on preparing individuals for a wide range of jobs requiring varying levels of education including high school, post-secondary certifications, two and four year degrees, and post baccalaureate programs.

A. Philosophy

Some of the assumptions that drive our current understanding of Career and Technical Education help define it and distinguish it from other educational fields.

- encourages learning that makes connections to the world of work and work-based programs;
- promotes clear, articulated educational pathways from pre-kindergarten to post-secondary options; and
- addresses the long-term needs of successful economic and social development of individuals rather than narrow, short-term interests of special interest groups, business, or industry.

B. Content Disciplines

The content disciplines that make up CTE are based on real-world occupations and adult roles. Minnesota has grouped CTE into the following content areas and acknowledges the changing nature of work continually impacts how these areas are defined:

- **Agriculture**
- **Business**
- **Family and Consumer Science/
Service Occupations**
- **Health Occupations**
- **Technology, Trades & Industry**

For example, Business introduces keyboarding to elementary and middle level students while Family and Consumer Sciences and Technology Trades and Industry Education are often introduced as specific subjects at the middle school level. The remaining areas are generally introduced in high school. Within each of these disciplines there are two sources of curriculum content: the knowledge and skills unique to the discipline and the knowledge and skills of traditional academic subjects such as math, science and reading that are needed to function within the discipline. Because CTE disciplines demand a broad base and wide focus, many of the concepts are introduced as part of the elementary school curriculum.

What Is Unique About Career and Technical Education?

Vision - Career and Technical Education (CTE) provides a contextual application of academic competencies, skills and standards. CTE contributes to the overall education of Minnesota citizens through its emphasis on strong technical and occupational skills. CTE contributes to the economic vitality of individuals, families and the broader community by enhancing a learner's preparation for participation in a career, life-long learning and responsible citizenship.

CTE programs blend traditional academic subjects with the practical application of skills. They also promote genuine learning and authentic accountability. As a discipline, CTE is based on the following:

A. Benchmarking against standards

Various occupational or industry-specific standards define ultimate expectations for workers within a CTE program. CTE is expected to address these standards.

B. Assessing student achievement through demonstrated performance

From building a bench to creating a spreadsheet to demonstrating CPR, CTE has always expected students to show what they know. This type of performance assessment is an important element of many standards-based educational systems and is considered a best practice in the field of education.

C. Creating partnerships with business, industry, and community groups

Partnerships, with groups beyond the school walls, enrich students' understanding of the world and the world's understanding of students. Through student participation in job-shadowing, internships, apprenticeships and other work-based learning programs, partners provide them the experience of being "out into the real world." Through providing speakers, mentors, equipment and program expertise, partners bring the "real world" of work, community and family into the schools.

D. Promoting student organizations to acquire and demonstrate the knowledge and skills of a discipline

CTE has a rich history of strong student organizations. Students participating in Future Farmers of America (FFA), Health Occupations Students of America (HOSA) or other student groups have opportunities to reflect and extend their classroom or partnership experiences. In many instances, these organizations provide opportunities to meet or demonstrate proficiency in industry and national curricula, in a variety of settings.

E. Coordinating with higher education to recognize and build on specific skills acquired in high school

Specific articulation agreements between high school and post-secondary schools (including technical colleges, trade schools, and two-year and four-year comprehensive higher education institutions) allow students to earn credit toward graduation or completion in both programs. These agreements specify the common outcomes of the courses and provide clarity about what a student completing the course or program of study has accomplished.

How do the unique features of CTE impact teaching?

A common challenge for teachers is to integrate industry and curriculum standards into their lesson plans; assess student achievement through demonstrated performance; and create and maintain partnerships with business, industry and community groups. Secondary CTE teachers are also expected to coordinate student organizations, articulate programming with post-secondary institutions and maintain their own skill base as a professional within their field of specialty. Successful teachers view these expectations not as individual exclusive requirements but as mutually reinforcing elements in a truly integrated program.

- Standards require performance assessment;
- Teaching to standards and assessing through performance can be done in work and community settings or within the activities of student organizations; and
- Clear curriculum standards and assessment create the conditions for designing articulation agreements.

How do standards in industry and education affect CTE programming?

A standard may be best described as a goal with a pre-set level of expected performance. To achieve at the standard level means to meet the expectation. The importance of high level performance in business and industry has increased and is subsequently influencing education's view of performance. CTE, as both the translation of education to business and industry and the translation of business and industry to education, is at the center of many sets of standards. Thus, standards in the world of work and in education guide CTE programs.

Standards in the World of Work

What Is an Employability Standard?

Employability standards clarify skills and attitudes necessary for seeking, obtaining, and maintaining employment. In 1991, the U.S. Department of Labor identified three categories of foundational competencies for workers: basic skills, thinking skills, and personal qualities. In addition to these foundational competencies, the report titled, "*What Work Requires of Schools,*" also listed competencies for effective workers, categorized as, "*resources, interpersonal skills, information, technology and systems.*" Known by the name of the group that produced the report, the Secretary's Commission on Achieving Necessary Skills (SCANS), this collection of foundational and effective worker competencies has been widely circulated and accepted.

What Is an Industry Standard?

Individual industries have defined sets of skills and processes necessary to carry out essential tasks of an occupation. These industry standards are written to set forth entry-level knowledge and skills necessary to perform successfully in a specific workplace. The standards help inform many audiences, including students, employers and educators.

Standards in the World of Education

What Is a Program Standard?

Federal mandates for program quality have accompanied federal funding for CTE. The Carl D. Perkins Vocational and Technical Education Act (1998) requires each consortium, receiving funding under the act, to submit five-year development plans in what are described as seven essential tech prep program elements.

The Perkins Act (Section 113) introduces the language of standards in its “core performance indicators” whereby:

Each eligible agency shall identify its state plan for core indicators of performance for vocational and technical education that include, at a minimum, measures for each of the following:

- i. Student attainment of challenging state established academic, and vocational and technical skill proficiencies;
- ii. Student attainment of a secondary diploma or its recognized equivalent, a proficiency credential in conjunction with a secondary school diploma or a post-secondary degree or credential;
- iii. Placement in, retention in and completion of post-secondary education or advanced training; placement in military service or placement or retention in employment; and
- iv. Student participation in and completion of vocational and technical education programs that lead to nontraditional training and employment.

The standards, set at the federal level to judge the overall quality of a career and technical program, are reflected in Minnesota’s CTE program evaluation process. The Minnesota Department of Education has developed nine program standards which are personalized to the specific program disciplines of CTE. There are fifty-one performance indicators identified to designate expected levels of attainment. The standards and performance indicators also provide the basis for state-level CTE program approvals.

Education reform in the United States reflects both the standards movement and the notion of continuous improvement, evidenced through the quality movement championed by U.S. business and industry. Practitioners in the field of education are being asked to look at data, including examples of student work; to identify strengths and weaknesses and to improve overall delivery systems. Once standards are implemented, the basic premise of continuous improvement underlies the system and occurs when performance is evaluated against the standard. After performance is evaluated, monitoring and adjusting of the system occurs to ensure the standard is achieved.

National Content Standards

Each discipline within CTE has identified national standards. While each standards document is *unique*, national standards generally propose key standards and benchmarks for a subject. They also define vision and mission statements that often integrate industry expectations into K-14 programming with respect to that curricular area.

Integrating Workplace and Education Standards Into CTE Programming

Employability, industry, state program and national content standards can all present a confusing jumble of expectations for educators. Understanding the purpose of these standards is critical to effectively implementing them.

Minnesota CTE Program Standards are the starting point for Minnesota CTE programs. These umbrella standards ensure that federal concerns for overall programming are met. Educators who oversee the implementation of a CTE program will use these nine standards in their program approval and continuous improvement process.

Classroom implementation of standards involves the integration of state, national, and industry standards specific to the program. The curriculum goals are determined through an integration of these three elements. The purpose of this framework is to provide teachers with information on how these three elements specifically align so that lesson planning can incorporate all of the elements.

Teachers, who successfully integrate the state, national, and industry standards, consider the SCANS and employability skills an outcome of their instruction. Along with students acquiring industry-specific skills, students will be prepared as workers ready to meet the challenges of our future.

Standards-based education reform has the potential to fuse academic knowledge and practical applications. As Minnesota schools have moved to implement a state-mandated system of standards, we have seen academic-based subjects work to incorporate practical application in their programs. A simultaneous effort is being made to infuse CTE programs with rigorous academics.

Career and Technical Education programs provide a strong connection between academic learning and the practical application. Ideally students would be exposed to the academic concepts in a more traditional academic classroom setting. This would be followed by students using the appropriate process skills to demonstrate mastery of their learning through practical applications. These real world experiences would occur in a career and technical education setting. A high level of interdepartmental coordination and creative delivery systems are needed to create a seamless, high quality learning experience for students. Such ideals pose a challenge to a delivery system where concepts are often introduced, mastered and assessed in a single traditional classroom setting.

Work-Based Learning

Work-Based Learning (WBL) is an element in education which provides students with opportunities to build career awareness, explore career options, and develop critical thinking skills. WBL is described as any formalized learning consisting of instruction that occurs concurrently at a school and worksite settings. WBL cannot be achieved in isolation. It requires a collaborative effort between businesses and schools.

In today's global economy, employers must possess cutting-edge technology and highly skilled employees to remain competitive. Technology is moving at a pace that was never thought possible. Because of the quick change currently happening, our schools will never have the financial resources to maintain state-of-the-art equipment, which is necessary to prepare young people for the ever-changing workplace. When schools work as partners with business and industry, young people can receive relevant instruction from experts, and gain experience using cutting-edge equipment.

Definition of Work-Based Learning

WBL describes any learning which occurs at an off-school worksite (where goods or services are produced). It involves learning experiences and activities that include actual paid or unpaid work experience such as: job shadowing, worksite field trips, structured cooperative work experiences, internships, youth apprenticeship and career mentoring.

*Adapted from "Work-Based Learning, How to Advance Occupation Skill Develop and Career Awareness for Learners", Minnesota Department of Children, Families & Learning, Second Edition, 2000

From 1997-2001 Minnesota observed a dramatic increase in the number of students participating in WBL activities. The number of schools taking part in job shadowing/worksite field trip activities increased from 190 to 339 while student participation increased 75% from 31,562 in 1997 to 55,280 in 2001. During this same time period, the administering of career interest inventories increased from 250 to 616 schools with an increase in student participation from 5827 to 8910, respectively. Paid and non-paid work experiences at the high school level demonstrated an increase of 109% from 5235 to 10988 participants. These numbers appear to indicate a broadening support for WBL programs. ("Accomplishments Survey on Performance Indicators, Minnesota's School-To-Work Initiative - 1997-2001." Minnesota Department of Children, Families & Learning.)

Today, in Minnesota, students along with their parents are recognizing an even greater need to make wise career decisions and to begin developing basic work skills in order to be competitive in the employment market. A WBL program provides this direct link. The impact is great on any student including youth with disabilities. A WBL program also provides a direct avenue for education to achieve the goal of preparing students to become productive citizens at the local, state and national levels.

The need for highly skilled, excellent workers will continue even in a fluctuating economy. Our young people need to have opportunities to explore career options and learn transferable work skills. A quality WBL program provides students with these opportunities while they are in high school.

Along with the technological advantages that come with WBL, several additional practical reasons exist for schools and employers/businesses to collaborate. Employers know what knowledge, skills, and behaviors employees must possess to be successful. Young people want to be successful but are often unable to connect the academic learning in school with the skills required to be good citizens and employees. Employers, working with schools, can provide learning experiences for young people to be able to connect the knowledge they are learning in school to its application in real world situations.

Young people typically become aware of the world of work in the elementary and middle school grades through activities such as worksite field trips followed by brief job shadowing and service-learning activities. The next career exploration to occur includes early career awareness activities through career mentorship, more service-learning and unpaid internships. Finally, highly structured, paid and unpaid work experiences offer students the chance to develop the academic, interpersonal, and technical skills specific to a chosen career field.

Through all of these WBL experiences, adult mentors, worksite supervisors and classroom teachers guide and challenge young people to meet high standards. Students acquire information and skills appropriate to a specific or variety of career fields while learning general work expectations such as managing resources, managing information, teamwork, and self-management skills of promptness, dependability, commitment, persistence, and self-direction.

The workplace is an active learning environment; workers learn by doing, develop skills to complete tasks and constantly improve their abilities. Schools can also be active learning environments and the curricula at school and work should be designed to reinforce one another. By communicating closely with one another, schools, businesses and other organizations can find better ways to incorporate workplace concepts and technologies into curriculum. This will ensure that students learn as much as they can from their WBL experiences.

A comprehensive WBL program should link school-based, work-based and connecting activities. Proper planning is necessary if local education agencies (i.e. school districts, alternative learning centers, and charter schools) want to develop quality programs. The establishment of partnerships which link schools with local employers/businesses and community agencies is the foundation for creating meaningful activities.

A very important step is to establish an advisory committee early in the planning process. This committee, composed of local businesses, community agencies, educators, parents and young people, will serve as the “sounding board” and help in the initial planning stages. An advisory committee can assist with program implementation and provide on-going review and recommendations for improvement.

In the early planning stages of a WBL program, it is strategic to list all community businesses/agencies already involved in WBL activities; assess the quality of existing activities; assess labor market trends and workforce development needs; determine funding and local education agency support; identify local, state, national and industry standards and identify potential barriers. The plan should include a list of WBL activities the community would like to see developed or ones which are connected to a career and technical education program (CTE), a timeline for their development including a plan to market the program and who will assist in developing and implementing program components.

A well-defined process for selecting students is needed for a quality program. Defining the process is an excellent task for the program advisory committee. The use of a student selection process demonstrates the program's integrity and may help prevent a program from becoming a "dumping ground" for problem students at any time during a semester.

The coordinator, employed by the local educational agency, is the person responsible for the management of the program. This person must be licensed by the Minnesota State Board of Teaching as a secondary teacher who has completed additional educational requirements for the WBL coordinator endorsement. *(If individual WBL experiences are longer than 40 hours in length, the WBL endorsement is required.)*

The Work Experience and Career Exploration Program (WECEP) is a one or two-year transition program designed for students, ages 14 and 15, who have had difficulties with their previous school experiences. Students may be employed during school hours and in some occupations otherwise prohibited by federal and state child labor laws. WECEP is designed to provide a carefully planned work experience and career exploration program that meets the participants' needs, interests and abilities. The program helps dropout prone youth to become reoriented and motivated toward education and helps to prepare them for the world of work.

Student organizations provide opportunities for students to learn about and explore different leadership/career skills and roles. **(Students must be enrolled in a CTE program area and in grades 10-12.)**

Career Planning

Career planning is comprised of career awareness, exploration and development. This is a lifelong process through which one learns about oneself in relation to the world of work. Career awareness, exploration and development helps young people identify, select and continuously assess their interests and goals. Young people need to know what career options exist, what job opportunities are available, what knowledge and skills are needed to be successful in a career and what resources are available to gain the knowledge and skills.

Career planning provides the foundation for young people to make informed decisions about their future. It involves a team effort of parents and/or guardians, school guidance counselor, teachers, mentors and a WBL coordinator working with students.

Students explore career options through self-assessment of their skills and interests. **Career exploration* is gained through activities such as field trips, job shadowing, mentoring, entrepreneurship and internships. *Career development* begins with career and technical education coursework leading to work experience or apprenticeship. (*The school counselor has excellent career assessments and resources available for students.)

During the career planning process students may:

- ❖ Become aware, explore, understand and prepare for life decisions/career decisions.
- ❖ Discover more about themselves, such as their interests, abilities, skills, talents and dreams.
- ❖ Explore the world of work and learn what is needed to succeed in a career field.
- ❖ Begin to develop a portfolio demonstrating knowledge and skills.
- ❖ Learn about the education and training needed to attain their goals.
- ❖ Practice the planning process they will use throughout life as they change jobs.
- ❖ Learn how to use information gathered during in-school and out-of-school experiences to make decisions and set future goals.
- ❖ Experience real life work situations so they have a realistic view of what employers want and need.
- ❖ Integrate knowledge about themselves with personal experiences to begin to understand the complex connections between success at school, success at work, and satisfaction with life.

Career Planning Model

1. Self-understanding:

“This is who and where I am.”

2. Exploration:

“These are the choices available to me to meet my needs and interests.”

3. Goals and Action:

“This is where I want to go and how I’m going to get there.”

4. Evaluate:

“This is what I have done, what I have learned and what I will change to better accomplish my goals.”

Career Fields

Career Fields are groupings of occupations from one or more industries that share common skill requirements. They provide a means of organizing the thousands of career choices within the school curriculum. A student may elect to pursue a career in one field, but is not “locked into” that particular field. There are ties between each of the fields, and a student can easily move from one field to another. The concept is to provide students with the knowledge to make informed career decisions, not to prepare workers for specific careers.

The following six broad Career Fields can assist a student to become aware of and begin to explore career options:

Agriculture and Natural Resources

- Includes programs related to animal & plant sciences, biotechnology, agricultural mechanics, food processing, agri-business, the environment and natural resources. These may include agriculture, earth sciences, environmental sciences, fisheries management, forestry, horticulture and wildlife management.

Arts and Communication

- Includes programs related to the humanities and to the performing, visual, literary, and media arts. These include architecture, creative writing, film and cinema studies, fine arts, graphic design and production, journalism, foreign languages, radio and television broadcasting, advertising and public relations.

Business Management and Administration

- Includes programs related to the business environment. They may include businesses, sales, marketing, hospitality and tourism, computer/information systems, finance, accounting, personnel, economics and management.

Engineering, Manufacturing and Technologies

- Includes programs related to the technologies necessary to design, develop, install or maintain physical systems. These may include engineering and related technologies, mechanics and repair, manufacturing technology, precision production, electronics and construction.

Health Services

- Includes programs related to the promotion of health as well as the treatment of injuries, conditions and disease. These may include medicine, dentistry, nursing, therapy and rehabilitation, nutrition, fitness and hygiene.

Human Services

- Includes programs related to economic, political and social systems. These may include education, law and legal studies, law enforcement, public administration, child and family services, religion and social studies.

Career Clusters

The U.S. Department of Education has developed 16 broad Career Clusters that reflect a new direction for education. Each cluster consists of all entry-level through professional-level occupations in a broad industry area. A cluster includes both the academic and technical skills and knowledge needed for further education and careers. Clusters provide an organizing tool to assist educators, counselors and parents as they work with students to identify interests and goals for the future.

www.careerclusters.org

- Agriculture and National Resources
- Architecture and Construction
- Arts, A/V Technology and Communication
- Business and Administration
- Education and Training
- Finance
- Health Services
- Hospitality and Tourism
- Human Services
- Information Technology
- Law and Public Safety
- Manufacturing
- Government and Public Administration
- Retail/Wholesale Sales and Service
- Scientific Research/Engineering
- Transportation, Distribution and Logistics

Career Awareness and Exploration Example

Matthew always thought that he would farm just like his father and grandfather. He always helped his dad around the farm and he enjoyed it. Matthew also had an interest in computers. He was able to explore computers through coursework at his high school. His counselor helped him explore career options based on his interests in farming and computers.

Matthew learned there are many possible ways to combine his farming and computer interests. He read about farmers who use computer technology on their farms. Through the use of the Internet, Matthew learned how to use satellite weather information to help his family plan crop planting schedules.

Career Planning Resources



Minnesota Career Information

MCIS is an easy-to-use computerized system designed to help high school students with career planning.

Updated annually, MCIS has current information about:

- Occupations, organized into six career fields
- Employment in traditional and nontraditional occupations
- National and Minnesota-specific schools and programs of study
- Scholarships and financial aid
- Job searches and self-employment
- Military careers
- Minnesota industries and more

MCIS also includes:

- Practical Learning Activities (for teachers)
- Links to standardized assessments
- Occupational videos
- Internet links to resources and schools
- Sorting tools to find schools and scholarships
- Optional modules, “My Journey” electronic portfolio and “**IDEAS** Interest Inventory”

MCIS also offers other career resources designed for ages K-adult.

Most schools in Minnesota have MCIS. Check with the school counselor or career center for more information. For more information call 1.800.599.6247 or 651.582.8357 or visit the MCIS website: <http://clf.state.mn.us/mcis/>



ISeek Solutions

Internet System for Education and Employment Knowledge

ISeek Solutions provides valued policy and services that serve the career planning, education, employment and employer marketplaces. ISeek Solutions partners with education providers, career content providers, government, non-profits and businesses to create, build and market career, workforce, education and e-learning solutions.

www.iseek.solutions.org

(Internet System of Education Employment Knowledge)

<http://www.iseek.org>

ISEEK is an innovative internet-based system that helps people make informed choices about careers, education, jobs and business.



Minnesota Careers is an annual career exploration publication for career explorers. It provides Minnesota-specific labor market information, including size, salary, growth, number of job openings, training and education requirements and job availability for over 200 occupations. The publication also includes an interest assessment, educational and training information, and guides for making career decisions and future choices. In addition, it points users to helpful career products and services offered by other state agencies and organizations.

<http://www.mncareers.org>

Tech Prep Overview

Tech Prep, which began in the early 1980's as a small, locally driven high school improvement strategy, has now grown into a major national strategy for improving students' academic knowledge and technical skills. In his 1985 book, "The Neglected Majority", Dale Parnell introduced a four-year program of instruction that integrates secondary and postsecondary education through the 2+2 concept. The 1990 amendments to the Carl D. Perkins Vocational Act of 1984 provided guidelines and funding for Tech Prep program development in Title III E, "Tech-Prep Education Act". As defined under Perkins, Tech Prep is a sequenced program of study that combines at least two years of secondary and two years of postsecondary education. It is designed to help students gain academic knowledge and technical skills, and often earn college credits for their secondary coursework. Programs are intended to lead to an associate's degree or a certificate in a specific career field, and ultimately, to a high wage, high skill employment, or advanced postsecondary training. Federal funds are distributed to states, which then award grants for planning and implementation to a consortium of local secondary education agencies and postsecondary institutions to plan and operate Tech-Prep programs.

Minnesota Tech Prep is a critical strategy for education of our future workforce. Tech Prep is short for Technical Preparation. It prepares students for successful transition to college in career and technical programs and to work. Today's workplace requires advanced technical skills in a rapidly changing and emerging technology. Minnesota Tech Prep comprises a strong partnership between Minnesota State Colleges and Universities (MNSCU) and the Minnesota Department of Education for high school and college students interested in exploring and pursuing technical careers. Minnesota State Colleges and Universities, the fiscal agents for 33 Minnesota consortia, are authorized to expend the funds allocated through an application and funding formula process. High school teachers and staff in approximately 320 Minnesota school districts, and faculty from most MNSCU campuses, work together to develop rigorous contextual academic and technical curriculum for students interested in technical careers. For the 2003 fiscal year, Minnesota received 1.7 million federal dollars through Tech Prep allocations. Through the use of federal Tech Prep funds, consortia attempt to increase access to advanced skill attainment, improve readiness for college, provide staff development for high school and college faculty, and make an impact on the quality of teaching. Tech Prep produces results, through accountability with education and business, by utilizing authentic measurement of student outcomes. Through Tech Prep, the educational delivery of standards is improved with the application of academics and technology by the students. For additional information see <http://www.grantsplus.mnscu.edu/> and click on Tech Prep.

Minnesota Tech Prep Expenditure Guidelines

All expenditures must be in the approved Tech Prep annual plan and be reflected in objectives, strategies and measures. Federal and state guidelines prohibit supplanting. Supplanting is defined as items previously or normally paid for with state or local funds.

Examples of Allowable Expenditures

- Professional development
- Curriculum development stipends/mini-grants
- Substitute teacher coverage
- Instructional resources to enhance technical courses
- Career assessment resources for grades 7-12 (software, site licenses, or other career resources)
- College readiness assessments (Accuplacer)
- Marketing materials to promote Tech Prep opportunities
- Work-based learning activities for students and staff
- Resource speakers
- Conference registration for coordinators, teacher, counselors and administrators when related to Tech Prep by at least 75 % of the total program
- Software with state Tech Prep approval
- Textbooks for implementing new industry skill standards curriculum, with state Tech Prep approval
- Textbooks may not be part of the replacement schedule and must have state Tech Prep approval
- College texts for course when implementing a Tech Prep College Credit Agreement

Perkins Funding

Federal Carl D Perkins dollars are provided to Minnesota from the U.S. Office of Vocational and Adult Education (OVAE). The purpose of the grant is to provide dollars for Approved Career and Technical Education Programs (CTE) at secondary (grades 10-12) and post-secondary (2-year) institutions. These dollars must be used by state approved CTE programs with appropriately licensed teachers.

Federal funding for secondary programs is based on a formula that reallocates Perkins dollars to districts as follows:

- 70% of the dollars are for students 15-19 years of age and who are eligible for but not necessarily accepting services for, free and reduced lunch.
- 30% of the dollars are for any students 15-19 years of age.

In order for a single school district to be eligible for an allocation, the formula must produce a minimum of \$15,000 in allocations. For those single districts falling below this amount, it is suggested they partner with other districts in their area to form a consortia.

Collaborative activities must account for 10% of the dollars allocated to the district/consortia. Partnerships with post-secondary, business and industry, community organizations, etc. are considered eligible for collaborative activities.

Career and Technical Education programs must be approved through the program approval process established by the Minnesota Department of Education. According to Minnesota Statute, programs will be required to renew their approvals every five years. A statewide process was established in 2001-2003 to complete the program approval status for ALL CTE programs in Minnesota public schools. The following schedule below shows the renewal dates based on geographic regions:

First Cycle	Minnesota Region	Second Cycle
Fy04-05	Southwest Minnesota	FY09-10
FY05-06	Southeast Minnesota	FY10-11
FY06-07	Minneapolis and West Metro	FY11-12
FY07-08	Northeast AND Northwest Minnesota	FY12-13
FY08-09	Central Region AND St Paul/East Metro	FY13-14

Both federal Carl Perkins dollars and the local levy dollars may only be spent in programs that have completed the state approval process with the Minnesota Department of Education AND where teachers hold the appropriate license. Contact a program representative if you have questions regarding program approval or licensure requirements.

Student Organizations

Career and technical student organizations across the state of Minnesota involve approximately 30,000 students in skill-based education programs. Career and technical education student organizations involve students in middle, junior and senior high schools, as well as state colleges and universities. Nearly 800 corporations, labor unions and trade associations across Minnesota support career and technical education student organizations.

Career and technical education student organizations vary widely in their career focus and skills emphasis. However, their foundation is in the commitment to provide quality school, work-based and service learning through hands-on connecting activities, recognition through competition, awards for achievement, real-world leadership experiences and other individual and team-building programs.

The benefits of career and technical student organizations are many. Through these organizations, students:

- learn skills and gain knowledge that will help them to become leaders;
- to make informed career decisions; and
- succeed in the global economy.

Participants are motivated to become better students and productive citizens while achieving the skills needed to achieve high academic and occupational standards. Additionally, the student's self-esteem and self-confidence are enhanced and strengthened.

Statewide Career and Technical Student Organizations

- Business Professionals of America (BPA)
- Distributive Education Clubs of America (DECA)
- Delta Epsilon Chi
- FFA (Formerly Future Farmers of America)
- Future Career and Community Leader of America (FCCLA)
- Health Occupations Students of America (HOSA)
- Home Economics Related Occupations (FCCLA-HERO)
- Post-secondary Agriculture Student Organizations (PSA)
- Post-secondary Business Professionals of America (BPA)
- Vocational Industrial Clubs of America (VICA)
- Post-secondary Vocational Industrial Clubs of America (VICA)