





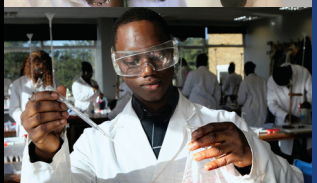

Illinois' Career Cluster Model

ILLINOIS
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Illinois Community College Board
Illinois State Board of Education

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Illinois' Career Cluster Model

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June 2009

Office of Community College Research and Leadership
University of Illinois at Urbana-Champaign

ILLINOIS
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Introduction

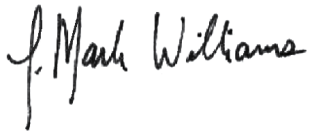
Dear Colleague:

The Carl D. Perkins Career and Technical Education Improvement Act of 2006 (Perkins IV) promises to foster significant changes in Illinois' educational landscape. Central to these changes is the goal of enhancing career opportunities for Illinois students. Through a long standing and committed partnership, the Illinois State Board of Education and the Illinois Community College Board are dedicated to implementing programs of study in ways that benefit all Illinois students. Illinois educators have the opportunity to help students develop the knowledge and skills that will allow them to be successful in their careers and throughout their lives.

As a part of this effort, our two education agencies have adopted the States Career Cluster Framework, an important step for our state. This framework is consistent with other state level efforts that enhance workforce and career development. This document lays the groundwork for common language and themes, presents the Illinois Career Cluster Model, and creates a shared understanding of programs of study by offering definitions and examples. It also contains a link to a PowerPoint that can be copied and used locally.

Our agencies strive to make sound decisions and implement effective policy. The responsibility of local educational leaders is to shape decisions utilizing local expertise that support the success of all students. Collaboration between secondary and postsecondary educational leaders is more important now than ever.

Sincerely,



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The *Illinois' Career Cluster Model* booklet provides information to multiple stakeholders on the implementation of career clusters in Illinois. This booklet is an extension of the previous edition titled *An Introduction to Illinois CTE Programs of Study* (2008), and provides a resource for partners to understand Illinois' Career Cluster Model as its own adaptation of the States Career Cluster Framework. It is intended for individuals familiar with career clusters and programs of study and those beginning to learn about them. We encourage readers to share this resource with all partners for implementation of the framework. The booklet is divided into seven sections:

- Perkins IV - main themes of the Carl D. Perkins Career and Technical Education Improvement Act of 2006.
- Key Concepts – terms, definitions and benefits of the career cluster approach, to help partners become familiar with the States Career Cluster Framework.
- Career Cluster Framework - graphic representation of the essential knowledge and skills, the 5 career and technical education areas at the secondary level, the 16 career clusters, and the 79 career pathways.
- Illinois' Career Cluster Model - visual example of the Health Science cluster and how different elements of the States Career Cluster Framework fit together in Illinois.
- Implementation – information useful to preparing partners to implement programs of study, including the six guiding principles and partner roles in the process.
- Acronyms – list for reference and ease of communication between multiple partners on programs, initiatives, and organizations.
- Resources - links to tools, research, and national organizations related to Perkins IV, career development, career clusters, and other information specific to Illinois.

A PowerPoint of the Illinois' Career Cluster Model pamphlet is available at: http://occrl.illinois.edu/files/Projects/perkins/POSpowerpoint.pps with a PDF version of the PowerPoint notes available at http://occrl.illinois.edu/files/Projects/perkins/POSnotespage.pdf

The Carl D. Perkins Career and Technical Education Improvement Act of 2006 (Perkins IV) is intended to provide students with the academic and technical skills necessary to succeed in the 21st Century knowledge- and skills-based economy. Perkins IV facilitates seamless transitions for students from secondary to postsecondary education* and careers. Career and technical education programs under Perkins IV are held to specific, valid, and reliable accountability standards as well as industry-based standards.

Perkins IV requires secondary and postsecondary education to work with numerous constituency groups including business and industry, local communities, counselors, principals, parents, and students including special populations in order to educate students for high-wage, high-skill, or high-demand occupations.

New Themes

Several themes are evident in Perkins IV:

- Accountability for results and program improvement at all educational levels
- Coordination of the career and technical education system with the entire P-20 system
- Integration of academic and career and technical education
- Alignment and connections between secondary and postsecondary education, including baccalaureate level
- Involvement of business and industry and community-based partners

*Perkins IV indicates under Section 3 – Definitions – (22) Postsecondary Education Institution – The term 'postsecondary educational institution' means:

A. an institution of higher education that provides not less than a 2-year program of instruction that is acceptable for credit toward a bachelor's degree;

B. a tribally controlled college or university; or

C. a nonprofit educational institution offering certificate or apprenticeship programs at the postsecondary level.

http://www.acteonline.org/content.aspx?id=1686

Secondary and Postsecondary Alignment

Secondary and postsecondary alignment is very important to Perkins IV and the National Career Cluster Framework. In Illinois, this alignment includes secondary education, community colleges, and four-year institutions through:

- Seamless transition
- Reduced remediation
- Non-duplicated courses
- Integrated academic and career and technical education curricula
- Standards-based curricula aligned with industry credentials and/or certification
- Dual credit opportunities
- Career development
- Professional development
- Articulation agreements
- Data-sharing agreements
- Partnerships and collaboration
- Continuous improvement

"The premise of this legislation [Perkins IV] is that high schools, industry, and higher education institutions need to work together to provide our workforce with the skills they need in order to achieve and compete in the 21st century. This bill works to ensure that American students are not just getting a world class education, but the best education in the world."

Senator Christopher J. Dodd, Connecticut

What are Career Clusters, Career Pathways, and Programs of Study?

Career Clusters are groups of occupations and industries that have in common a set of foundational knowledge and skills. There are 16 nationally recognized clusters within which are multiple career pathways.

> ***Cluster Level Knowledge and Skills:*** The cluster level knowledge and skills set is built on a common core required for career success in the multiple occupations included in the cluster. This shared core consists of the following elements: academic foundations; communication; problem solving and critical thinking; information technology applications; systems; safety, health, and environment; leadership and teamwork; ethics and legal responsibilities; employability and career development; and technical skills.

Career Pathways are multi-year programs of academic and technical study that prepare high school students for a full range of postsecondary options within each of the 16 clusters. Currently, there are 79 nationally recognized pathways, each with specific pathway knowledge and skills. These pathways provide a context for exploring career options at all levels of education and a framework for linking learning to the knowledge and skills needed for future education and employment.

> ***Pathway Level Knowledge and Skills:*** The pathway level knowledge and skills set is built on a common core of knowledge and skills required for career success in all programs of study aligned with the pathway. This core is specific to the pathway and consists of elements selected by secondary and postsecondary educators with input from business and industry and other stakeholders.

Programs of Study (POS) are sequences of courses that incorporate a non-duplicative progression of secondary and postsecondary elements which include both academic and career and technical education content. Programs of study should start no later than the ninth grade and continue through at least two years of postsecondary education. Programs of study include opportunities to earn college credit (dual credit) in high school, an industry-recognized credential or certificate at the secondary/postsecondary level, and an associate or baccalaureate degree.

Why a Career Clusters Framework?

The framework of career pathways, career clusters, and programs of study organizes educational preparation and occupational choices into a unified concept. By combining rigorous academics with career and technical education, students have a clear path to their future. Career clusters:

- Are for all students
- Create distinct educational plans of study students can follow from secondary to postsecondary education to the workplace
- Help create smooth transitions in the educational pipeline and reduce duplication
- Empower students through information and experiences they need to make informed educational choices
- Help counselors, teachers, parents, and students design individual plans of study
- Comprise a key element in enhancing economic development by connecting schools with business and industry

Who Benefits from Career Pathways and Programs of Study?

- **Students** benefit when there are links between education and careers. Career pathways provide career guidance and a framework for students to plan their future. Students are more motivated when they can see the relevance of their education and are provided with smooth transitions to college and careers.

- **Educators** (teachers, counselors, and administrators) benefit when they integrate academic and career and technical education curricula, partake in professional development, align with other school reform efforts, and receive support. Programs of study also connect educators with local business and industry to ensure that what students learn connects to current and emerging careers.

- **Employers** benefit when they have the opportunity to partner with educators to prepare future employees by determining necessary skills, certifications, and current knowledge to succeed in the workforce.

- **Communities** benefit when business and industry partners with education for local economic development and educational planning. Higher levels of educational attainment contribute to a healthier local economy.

Career Clusters Framework

Government & Public Administration
Governance
National Security
Foreign Service
Planning
Revenue & Taxation
Regulation
Public Management & Administration

Marketing
Marketing Management
Professional Sales
Merchandising
Marketing Communications
Marketing Research

Business Management & Administration
General Management
Business Information Management
Human Resources Management
Operations Management
Administrative Support

Information Technology
Network Systems
Information Support & Services
Web & Digital Communications
Programming & Software Development

Finance
Securities & Investments
Banking Services
Business Finance
Accounting
Insurance

Law, Public Safety, Corrections & Security
Correction Services
Emergency & Fire Management Services
Security & Protective Services
Law Enforcement Services
Legal Services

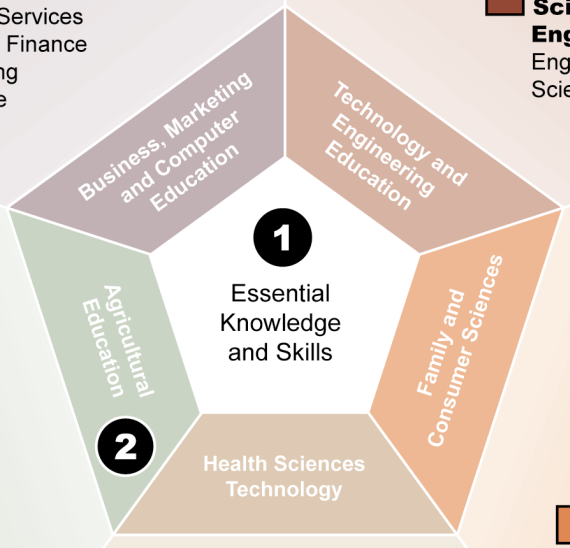
Transportation, Distribution & Logistics
Transportation Operations
Logistics Planning & Management Services
Warehousing & Distribution Center Operations
Facility & Mobile Equipment Maintenance
Transportation Systems/Infrastructure Planning, Management & Regulation
Health, Safety & Environmental Management
Sales & Service

Manufacturing
Production
Manufacturing Production Process Development
Maintenance, Installation & Repair
Quality Assurance
Logistics & Inventory Control
Health, Safety & Environmental Assurance

Architecture & Construction
Design/Pre-Construction
Construction
Maintenance/Operations

Arts, Audio/Video Technology & Communications
Audio and Video Technology & Film
Printing Technology
Journalism & Broadcasting
Telecommunications
Performing Arts
Visual Arts

Science, Technology, Engineering & Mathematics
Engineering & Technology
Science & Math



Agriculture, Food & Natural Resources
Food Products & Processing Systems
Plant Systems
Animal Systems
Power, Structural & Technical Systems
Natural Resources Systems
Environmental Service Systems
Agribusiness Systems

Human Services
Early Childhood Development & Services
Counseling & Mental Health Services
Family & Community Services
Personal Care Services
Consumer Services

Hospitality & Tourism
Restaurants & Food/Beverage Services
Lodging
Travel & Tourism
Recreation, Amusements & Attractions

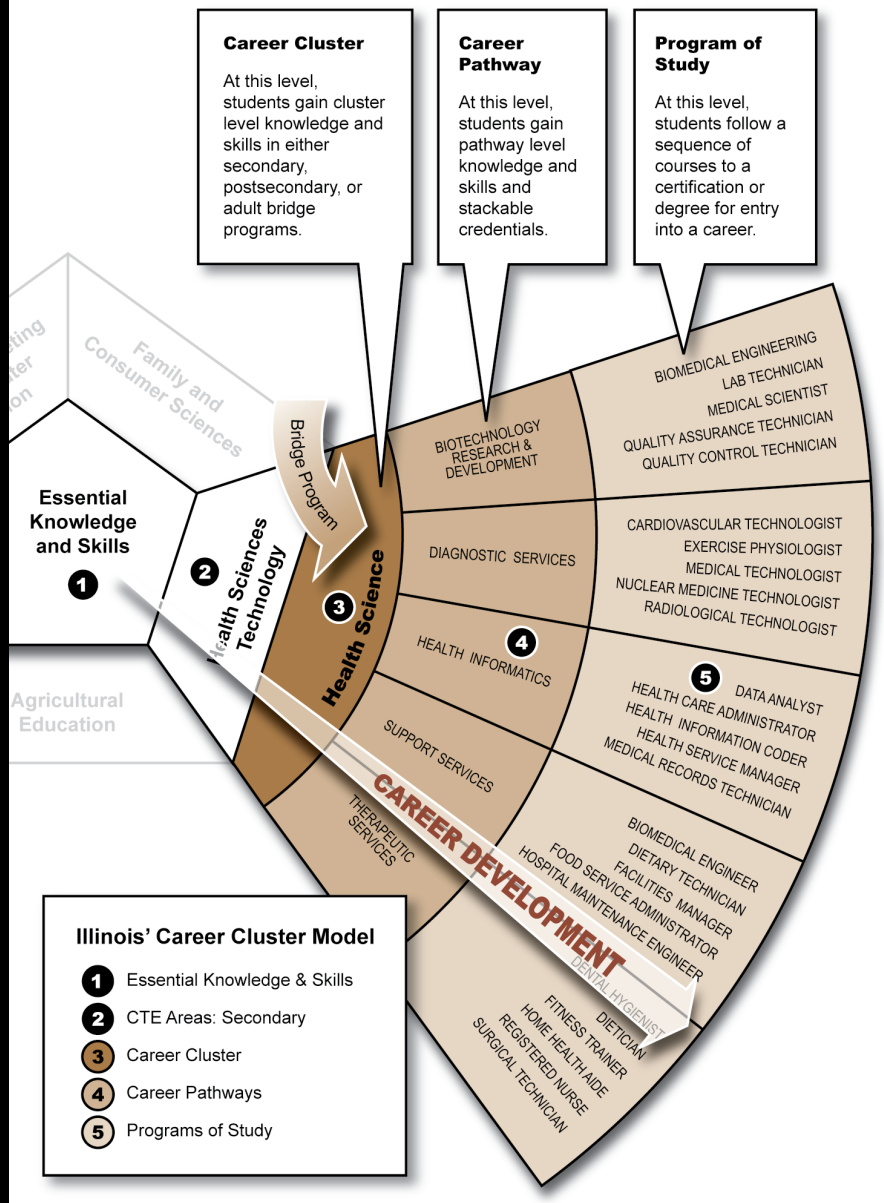
Education & Training
Administration & Administrative Support
Professional Support Services
Teaching/Training

Health Science
Diagnostic Services
Support Services
Health Informatics
Therapeutic Services
Biotechnology Research & Development

Career Cluster Framework
1. Essential Knowledge and Skills
2. CTE Areas: Secondary (5)
3. Career Clusters (16)
4. Career Pathways (79)

June 8, 2009
http://www.careerclusters.org

Illinois' Career Cluster Model



This example of the Illinois Career Cluster Model shows the relationship between one of Illinois' five secondary career and technical education areas (Health Sciences Technology), the related career cluster (Health Science), the five pathways within that cluster, and sample programs of study within the pathway. It also illustrates the essential knowledge and skills that are shared by all clusters, the cluster level knowledge and skills shared by all occupations within the pathways in the cluster, the pathway level knowledge and skills specific to each of the five pathways, and the programs of study which represent courses that are taken at multiple education levels which lead to employment in related pathway occupations. Career exploration and development are infused at all levels of the model. The model also shows an entry point for adults by including bridge programs that infuse cluster level knowledge and skills with adult education and remedial education course content.

Career Cluster
At the career cluster level , students are exposed to the breadth of essential and cluster level knowledge and skills needed for multiple careers. The career cluster framework provides multiple entry and exit points for students as they progress through a program of study. For example, a K-12 student may participate and acquire cluster level knowledge and skills and dual credit while in the secondary system, and adults may acquire cluster level knowledge and skills as they progress through an adult bridge program.

Career Pathway
At the career pathway level, students make choices about occupations in terms of their career interests, and start to acquire pathway level knowledge and skills at either the secondary or postsecondary levels of the educational system. Pathway level knowledge and skills are more specialized than those at the cluster level, preparing students to enter occupations that they have identified in their individualized plan of study. This means students become more specialized in their pursuit of occupational and career areas.

Program of Study
Through the program of study, students are provided with the opportunity to receive stackable credentials, secure credentials aligned with segments of the curriculum, and acquire certificates and degrees at multiple completion points from secondary school through the baccalaureate degree. Career clusters and career pathways offer the knowledge and skills required to complete a program of study that leads to the community college and/or university level and provide students with opportunities for certification and degree attainment.

Six Guiding Principles

Practitioners are encouraged to use these six guiding principles and associated design elements to aid local implementation and evaluate programs of study. For additional information on the guiding principles see: http://occrl.illinois.edu/projects/perkins/principles/.

A Framework for Local Implementation and Evaluation of Programs of Study

Principle	Principle Statement
1. Leadership, organization and support	Programs of study are developed, supported and led with guidance from collaborative partners.
2. Access, equity and opportunity	Each and every student has access to educational opportunities and services that enable their success.
3. Alignment and transition	Education and training providers, with input from business and industry, enhance alignment that facilitates student preparation and transition through the educational pipeline.
4. Enhanced curriculum and instruction	Curriculum and pedagogy involve rigorous and relevant instruction that enhances learning and enables students to attain academic and technical standards and credentials.
5. Professional preparation and development	Comprehensive and continuous professional development that impacts teaching and learning is delivered to enhance the recruitment, preparation, and retention of qualified instructional and administrative staff.
6. Program improvement and accountability	Data are collected, shared, and utilized to improve outcomes and demonstrate accountability.

Career Cluster Partners

Implementing the career cluster model involves partnerships between secondary education, community colleges, universities, business and industry, adult education providers, and community-based organizations. Without the involvement of all partners, it is difficult to align curriculum and meet the needs of diverse students. Partners need to work together to decrease duplication in curriculum, enhance college readiness and reduce remediation, and foster seamless transitions for students to improve their educational and employment outcomes.

Selected Strategies to Involve Partners

Business and Industry:
- Review and validate cluster and pathway level knowledge and skills
- Support student opportunities to explore careers
- Provide feedback to regional partnerships on critical skill shortages

Secondary Education, Community College and University Partners:
- Align curriculum with knowledge and skill statements
- Encourage, support, and participate in discussions across educational sectors
- Create and maintain articulation agreements to support course sequences
- Identify and facilitate dual credit opportunities
- Develop programs of study with multiple entry and exit points
- Collaborate to provide universally designed instruction and support services
- Develop data-sharing agreements to track student progress

Adult Education Providers:
- Include cluster level knowledge and skills in bridge programs
- Align bridge programs with postsecondary elements of programs of study
- Encourage and participate in discussions across educational sectors
- Develop occupational pathways with multiple entry and exit points

Community-based Organizations:
- Encourage, support, and participate in discussions with educational sectors
- Facilitate programs of study that provide access for diverse learners
- Encourage connections with students' communities, including employers

Abbreviations and Acronyms

ACC	Area Career Center
ACTE	Association of Career and Technical Education
ADP	American Diploma Project
AEFLA	Adult Education and Family Literacy Act
CCRI	College and Career Readiness Initiative
CCTI	College and Career Transitions Initiative
CRP	Curriculum Revitalization Project
CSSI	Critical Skills Shortages Initiative
CTE	Career and Technical Education
DCEO	Department of Commerce and Economic Opportunity
EFE	Education for Employment
ESEA	Elementary and Secondary Education Act of 1965
ELL	English Language Learners
HEA	Higher Education Act
HSTW	High Schools That Work
IAI	Illinois Articulation Initiative
IACTE	Illinois Association for Career and Technical Education
IBHE	Illinois Board of Higher Education
ICCA	Illinois Career Coordinators Association
ICCB	Illinois Community College Board
ICSPS	Illinois Center for Specialized Professional Support
ICTA	Illinois Career and Technical Administrators
IDEA	Individuals with Disabilities Education Act
ILAVESNP	Illinois Association of Vocational Education Special Needs Personnel
ILS	Illinois Learning Standards
IOES	Illinois Office of Educational Services
ISBE	Illinois State Board of Education
ISIS	Illinois Student Information System
IWIB	Illinois Workforce Investment Board
LEA	Local Educational Agency
LWIB	Local Workforce Investment Board
NAEP	National Assessment of Educational Progress
NAPE	National Alliance for Partnerships in Equity
NASDCTEc	National Association of State Directors of Career and Technical Education Consortium
NCLB	No Child Left Behind
NSF	National Science Foundation
NTO	Non-traditional Occupations
OCCRL	Office of Community College Research and Leadership
OVAE	Office of Vocational and Adult Education
PCCS	Partnerships for College and Career Success
Perkins IV	Carl D. Perkins Career and Technical Education Improvement Act of 2006
POS	Programs of Study
PLTW	Project Lead the Way
RTI	Response to Intervention
SREB	Southern Regional Education Board
STEM	Science, Technology, Engineering and Mathematics
USDOE	United States Department of Education
USDOL	United States Department of Labor
WIA	Workforce Investment Act
WIB	Workforce Investment Board

Perkins IV

Association for Career and Technical Education (ACTE): http://www.acteonline.org/

Illinois 5-year Perkins IV state plan: http://isbe.net/career/pdf/perkins_state_plan0713.pdf

Meeder, H. (2006). *The Perkins Act of 2006: Connecting Career and Technical Education with the College and Career Readiness Agenda.* http://www.achieve.org/AchievePolicyBrief_Perkins

Illinois Resources

Illinois Community College Board: www.iccb.org/cte.html

Programs of Study website: http://www.ilprogramsofstudy.org

Illinois State Board of Education: http://www.isbe.net/career/default.htm

Curriculum Revitalization Project: http://www.ilcte.org

Illinois Center for Specialized Professional Support: http://www.icsps.ilstu.edu/

Illinois Workforce and Career Information: http://www.ilworkinfo.com/

Illinois Labor Market Information: http://lmi.ides.state.il.us/

OCCRL

OCCRL Programs of Study Website: http://occrl.illinois.edu/projects/perkins

Webinars on the six Guiding Principles: http://occrl.illinois.edu/projects/perkins/webinars

OCCRL (2008) *Illinois Programs of Study Self-assessment.* Urbana-Champaign, IL: University of Illinois at Urbana-Champaign. http://occrl.illinois.edu/files/Projects/perkins/Working%20Documents/POSself-assessment.pdf

Career Development

National Career Development Guidelines: http://cte.ed.gov/acrn/ncdg/documents/NCDG.pdf

Williams, M. J., Bragg, D. D., Makela, J. P. (2008). *Comprehensive Career Development for Illinois: Findings and Recommendations of the Illinois Career Development Task Force.* Urbana-Champaign, IL: University of Illinois at Urbana-Champaign. http://occrl.illinois.edu/files/Projects/careerdev/Report/CDTF_Final_Report.pdf

Career Cluster

Kim, J., Kirby, C. L., Bragg, D. D. (2006, May). Dual Credit: Then and Now. *In Brief*, 1-4. http://occrl.illinois.edu/files/InBrief/Brief-spring-06.pdf

National Career Pathways Network (NCPN): http://www.cord.org/ncpn-index.cfm

National Association of State Directors of Career Technical Education Consortium: http://www.careertech.org/

States' Career Cluster Initiative: http://www.careerclusters.org

Nebraska Department of Education (2008). *Developing a Local Advisory Committee Resource Handbook.* Lincoln, NE: Author. http://www.nlc.state.ne.us/epubs/E2400/H044-2004.pdf

Research

Karp, M. M., Calcagno, J. C., Hughes, K. L., Jeong, D. W., & Bailey, T. R.. (2007). *The postsecondary achievement of participants in dual enrollment: An analysis of student outcomes in two states.* St. Paul, MN: National Research Center for Career and Technical Education. http://ccrc.tc.columbia.edu/Publication.asp?UID=547

Lewis, M., & Kosine, N. R. (2008). *What will be the impact of programs of study? A preliminary assessment based on similar previous initiatives, state plans for implementation, and career development theory.* Louisville, KY: National Center for Research in Career and Technical Education, University of Louisville. http://136.165.122.102/mambo/index.php?option=com_remository&Itemid=0&func=showdown&id=12

Stone, J. R., Alfeld, C., Pearson, D., Lewis, M. V., & Jensen, S. (2006). *Building academic skills in context: Testing the value of enhanced math learning in CTE.* St. Paul, MN: National Research Center for Career and Technical Education, University of Minnesota. http://www.aypf.org/forumbriefs/2007/Resources/MathLearningFinalStudy.pdf

Programs of Study

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