



Leader's Guide

Understanding the Career Clusters Framework

Welcome!



The **Program of Study Implementation Toolkit** offers four, self-paced modules that provide information about the essential elements for beginning the process required under the Carl D. Perkins Act. Each module is designed to provide awareness of the specific topic while reinforcing the interrelation of all four topics and their connection to successful development of programs of study.

Module topics include:

- Facilitating Successful Student Transitions
- Understanding the Career Clusters Framework
- Infusing Rigor, Relevance and Relationships in Academic and Career Education
- Integrating Career and Academic Education

What's in Your Toolkit

Downloadable and reproducible materials include the Leader's Guide and Participant Workbook. It is important to access these materials in preparation for a workshop presentation.

The **Leaders' Guide** materials include a copy of the script for each of the PowerPoint slides in the module. The script provides information that goes beyond the text printed on the slide. Close study of the script (reading and rereading multiple times to become familiar with the content) will allow extemporaneous delivery, which is more effective than reading to a workshop audience. At specific points in the presentation, participants may be asked to complete an exercise designed to reinforce the content of the topic. These exercises offer an excellent opportunity for small-group interaction and discussion—both vital elements to powerful learning. Each of the exercises can be completed by participants individually or in teams.

In planning for a workshop presentation, it is important to consider the length of time to allow for completing these exercises. For example, when using a team exercise approach, allow time for groups to present their results and group discussion of those results to occur.

The **Participant Workbook** materials supplement the PowerPoint slides for each module. This downloadable resource may be reprinted to produce paper copies for participants in a workshop setting. Participants will need to refer to their workbooks throughout the module. The workbook includes note pages for the PowerPoint slides and the exercises to be completed as well as handouts related to the exercises and for further reading. Plan to photocopy a workbook for each person attending the workshop.

Welcome, Continued



Please ask workshop participants to complete the **Participant Evaluation** that is included. In addition, please complete the **Leader Evaluation**, which consists of two parts:

- Your evaluation of the module materials (quality, usability)
- A summary of the participant evaluations and comments

You can download a pdf version of the participant evaluation along with the workbook to print and distribute at the end of the workshop. Additionally, you can complete the leader evaluation online at www.mcce.org. Your feedback assists the Missouri Center for Career Education in future development of materials for educators.

Appendices included in the workbook provide an overall **glossary** of terms used in all four modules as well as a list of **resource links** with brief explanations as to what information each offers.

Where to Find Additional Assistance

For additional assistance, contact MCCE at 660-543-8768 or www.mcce.org. MCCE Career Education Coordinators and/or Missouri Tech Prep Coordinators may be available (as their schedules permit) to present Career Clusters Framework Toolkit modules.

Other professional development services, ranging from two-hour presentations to full-day workshops to year-long residency programs, are available through MCCE for an affordable fee.

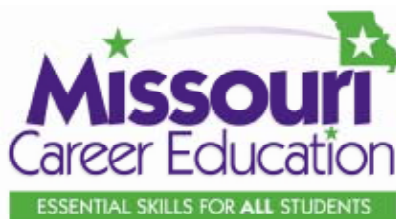
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Module Script



Module Script



Slide 1:

Welcome to this module on understanding the Career Clusters Framework. This module is the one of several modules found within MCCE'S Program of Study Implementation Toolkit.

This module is designed to provide you with an introduction to career clusters concepts and elements and help you begin to apply these to developing programs of study and student personal plans of study.

Slide 2:

As a result of this presentation, you will be able to:

- Clarify the purpose of the Career Cluster Framework
- Identify and define the elements of the Career Clusters Framework
- Explain the Career Cluster Framework and Function
- Advise students on determining a career cluster pathway and how it applies to his/her own personal plan of study
- Help students construct personal plans of study relating to a career cluster
- Apply career cluster concepts to personal plans of study

Slide 3:

In this module, we will initially define the Career Clusters Framework elements and help you visualize each one within the context of the framework.

Later on, we will introduce you to what's involved in developing programs of study and creating personal plans of study as well as to present resources for implementing the Career Clusters Framework in your area.

Slide 4:

In the first section, we will clarify basic understandings and define the elements of the Career Clusters Framework.

Slide 5:

The Career Clusters Framework is a tool developed nationally by the States' Career Clusters Initiative. Educators can use the career clusters materials to design courses and work-based learning experiences around specific occupational groups. The Framework also focuses on core academics — English, math, science, and social studies — and extra-curricular activities that match students' interests and skills.

Module Script



Slide 5, Continued:

Using the Career Clusters Framework:

- Supports success in the workplace, education, and life
- Prepares students for a broad range of career options:
 - o Employment
 - o Technical and postsecondary education
 - o Lifelong learning
- Increases the ability to be student centered, industry focused, and performance driven

Slide 6:

Career clusters is a SYSTEM that helps students prepare for a career PATH. This system supports DYNAMIC career preparation throughout life, which requires an individual to:

- Transition among jobs and careers
- Continually update skills and knowledge

Slide 7:

Career PATHs lead to a specific career, not a specific job. A range of occupations fall along any given career PATH.

Slide 8:

Together, career paths and the career clusters “round out” the framework of career planning and build on the core academic and technical skills developed in primary and middle school classroom environments.

Slide 9:

To Build Awareness: Missouri has identified six career paths to help students become aware of and explore careers in a logical and meaningful way. As students become more career minded, they have the opportunity to further their exploration through one or more of the career clusters.

To Implement Effective Planning: Missouri uses 16 career clusters as a way of organizing occupations and careers to assist educators in tailoring rigorous coursework and related activities for all students. Career clusters may be used beginning in grades 7, 8, or 9 and can continue as a framework for educational planning through postsecondary education. Career clusters in Missouri link what students learn in school with the knowledge and skills needed for success in post-secondary education and careers.

Module Script



Slide 10:

Together, foundation knowledge and skills form an integral part of the Career Clusters Framework.

The Career Clusters Framework was designed to provide all students a broad foundation for their future careers. To meet students' needs as they enter the workforce, knowledge and skills have been divided into 10 key topic areas that generally align to workforce needs identified in the national 1992 SCANS (Secretary's Commission on Achieving Necessary Skills) Report and the All Aspects of the Industry framework.

Business and industry groups have routinely identified certain skill areas as being of particular importance across all industries — communications, problem solving, ethics — as well as the systemic framework of any given industry. The knowledge and skill topic areas recognize these needs and allow an identification of specific knowledge and skills for each career area within a given topic. Also, because these topic areas are addressed in all of the career cluster knowledge and skills, they help guarantee a broad-based foundation of important knowledge and skills for all students and future workers.

Slide 11:

Career pathways provide a way of grouping careers and occupations that is more specific than the 16 career clusters. An individual pathway model similar to this one was developed by the States' Career Clusters Initiative for each of the 16 clusters. These pathway model charts and other curricular materials can be found on the States' Career Cluster Initiative Web site: www.careerclusters.org.

Slide 12:

These are the occupations of the Architecture/Construction Cluster Pathway. This framework gives learners a picture of how many options are available to them within a specific career cluster.

Slide 13:

Two products emerge from the Career Clusters Framework:

1. The program of study, which is a career-driven, collaborative effort to seamlessly integrate activities within a particular cluster
2. The personal plan of study, which is a student-driven, tailored approach to one or more programs of study that:
 - Addresses the educational and career goals of the student
 - Meets state academic standards and GLEs
 - Meets state graduation requirements

Module Script



Slide 14:

The development of a program of study involves the participation of many stakeholders, from secondary education through postsecondary education and the workplace and community. A program of study should provide a seamless, non-duplicative course of study with multiple entry and exit points to the workforce. This structure enables students and workers to better establish and pursue their career goals by offering an established system for moving quickly and easily from one step on a career ladder to the next. The program of study provides the basis for a student's individual personal plan of study.

Slide 15:

The Career Clusters Framework requires the application of career-centered studies in rigorous academics. This application provides relevance and student motivation to achieve. The four dimensions of relationships provide the means for a student to follow a seamless transition from middle school to high school through postsecondary education or training and to the workplace.

Slide 16:

Knowledge and skill statements have been identified for each career cluster and career pathway. They are further described by performance elements and measurement criteria.

Slide 17:

Because the knowledge and skills for each cluster are organized through the ten topic areas, the importance of these topic areas is reinforced in each pathway model chart.

Slide 18:

This sample illustrates a knowledge and skill statement within the health science career cluster and some of the performance elements and measurement criteria that define the knowledge and skills statement.

Slide 19:

A seamless educational system connects and coordinates curricula, instruction, and assessment. For example, a student who successfully completes Algebra I as an eighth-grader would receive high school credit for the course. Similarly, a high school student enrolled in a dual credit English Composition course would receive both high school and college credit for the course. In such a system, students need not duplicate mastered instruction, and course credits representing mastered competencies transfer easily from institution to institution.

Module Script



Slide 20:

This exercise will help you become familiar with how the Career Clusters Framework could support a student working toward one or more of the “in-demand” occupations in our state.

Slide 21:

On a national level, career clusters are combating some of these challenges to help students see relevance to what they are doing, and the coursework they are taking, to ultimately complete their educational aspirations.

This section covers:

- Making career development an ongoing process of connecting academics to careers
- Addressing decreasing educational achievement
- Replacing remediation with rigor and relevance
- Educating students for new markets and new expectations
- Articulating benefits for educators, employers, parents, and learners

Slide 22:

Times have changed, we are no longer involved in something called, “vocational education”; we are about providing a rigorous curriculum to help students meet the needs of the competitive 21st century workplace. More and more references are being made about our flat world! Engaging instructional techniques, combined with valuable content, show students the relevance of their studies while pursuing higher levels of rigor.

Slide 23:

Given these percentages of Missouri students who “lose out” on educational achievement, we need to help students think about their postsecondary futures and what kind of entry wage might they make in a chosen occupation.

The Career Clusters Framework is designed to improve student transitions so the educational pipeline of the state and the nation better meets the needs of the community, the individual, and the marketplace.

Slide 24:

Consider the impact of these nationwide statistics in the first four bullets. The last bullet illustrates how Missouri compares to these. What does this tell us about the rigor and relevance of secondary education in our schools? What are your experiences with students and remediation needs?

Module Script



The Department of Higher Education tracks data on academic preparation of Missouri public high school graduates who enter Missouri public two- and four-year institutions. The 2007 report (for the 2006 school year) shows a measurable increase in the percentage of students in this cohort requiring remediation since 1996 when the overall remediation rate was 26.3 percent. Overall the report indicated some improvement since 2005, although enrollment in remedial mathematics showed a slight annual increase. Here are the details:

- Overall: 36.4 percent (2006) compared to 36.5 percent (2005)
- Math: 29.6 percent (2006) compared to 29.4 percent (2005)
- English: 16.9 percent (2006) compared to 17.9 percent (2005)
- Reading: 10.1 percent (2006) compared to 10.2 percent (2005)

Slide 25:

This chart clearly indicates that today's (and tomorrow's) workplace rewards those who complete postsecondary education. As academic and career educators, we **MUST** work together to help students see the relevancy of what they are learning to the earning power they will have in the workforce. When learning is meaningful, students become enthusiastic and engaged learners.

Slide 26:

Focusing on career clusters provides a wealth of benefits for educational systems and, most importantly, for students. Overall, career clusters:

- Reduce the need for remedial studies in college
- Increase enrollment and persistence in postsecondary education
- Raise academic and technical achievement in high school and college
- Increase the percentages of students receiving postsecondary degrees, certificates, or other recognized credentials
- Improve students' chances of getting good jobs and pursuing further education

The next few slides will cover specific benefits for educators, employers, parents, and learners.

Slide 27:

Career Clusters Framework benefits for educators include:

- More engaged learners
- Broader community support
- Structure for true integrated teaching and learning

Module Script



- Enhanced achievement for all students
- Makes teaching fun by applying all knowledge – both academic and technical

Slide 28:

Career Clusters Framework benefits for employers include:

- Seamless pipeline of well-qualified workers
- Adaptable workforce to meet changing needs
- Meaningful engagement with the school system
- Effective framework for cross-training or re-tooling the workforce

Slide 29:

Career Clusters Framework benefits for parents include:

- More informed options
- Smoother transitions among learner levels
- Potential savings – integrated credit and articulation agreements
- More focused and engaged students

Slide 30:

John Foster at the Ballard Maritime Academy said, “My students are more interested in learning as they work to solve real business problems.”

Career Clusters Framework benefits for learners include:

- Relevancy
- Durable technical preparation
- Opportunities to explore multiple careers
- Connected, seamless transitions
- More engaged learning

Slide 31:

This quote speaks to the rigor associated with career clusters:

“For too long, educational institutions at different levels have tried to connect disparate pieces rather than create a unified whole. This band-aide approach to connecting disjointed pieces is unacceptable.”

Each occupational group, within career clusters, includes statements of essential knowledge and skills within key topics that are consistently noted as important by business leaders and educators.

Module Script



With this information in mind, let's look at program of study and how they can help us improve outcomes for students!

Slide 32:

Creating programs of study requires cross-institution collaboration. Each Perkins recipient must participate in development of at least one program of study by a Career Cluster pathway during Perkins IV (5 years total).

Slide 33:

Basically, programs of study have four components:

1. A curriculum framework designed around the 4+2+2 articulation models. (4+2 + 2 refers to 4 years of high schools, 2 two years of community college, and 2 years of baccalaureate college). Using this articulation model, we help students understand the importance of postsecondary education, whether it be at a tech school, community college, four-year institution, through an apprenticeship, etc.
2. The secondary component must include:
 - Career and technical course competency alignment to Show Me Standards and Grade Level Expectations
 - Courses meeting postsecondary (both two- and four-year institutions) entrance requirements appropriate for the career field within the overall program of study
 - Academic and technical foundation knowledge and skills as validated by Missouri industry councils
 - Opportunities for students to earn college credit through dual credit/articulated credit
 - Opportunities for students to earn or make defined (and documented) progress toward an industry-recognized credential or certificate, if appropriate
 - Opportunities for students to engage in leadership development through the appropriate Career and Technical Student Organization (CTSO)
 - Work-based learning experiences for students as early as 9th grade, where appropriate
2. The postsecondary component consists of:
 - Alignment and/or articulation between appropriate secondary programs
 - Alignment and/or articulation between one-year certificate, two-year degree, and four-year degree programs
 - Alignment with industry-recognized knowledge and skills, which leads to a certificate, credential, or two-year or four-year degree

Module Script



- Preparation for employment in high-skill, high-wage, or high-demand careers with multiple exit points
3. The business component consists of:
 - Work-based learning experiences as early as 9th grade, where appropriate
 - Business and industry participation in an advisory capacity
 - Ongoing support for the program of study, such as: teacher mentoring for industry-specific knowledge, assisting with student projects, and relevant experiences that are based on all aspects of the industry

Slide 34:

Take a few minutes to look at this program of study sample in your workbook (page 42). Review the components, including secondary coursework, postsecondary coursework, academic and CTE courses, extra-curricular activities and learner activities.

Slide 35:

Here is list of career/educational opportunities for students that provide real time/real life experiences in the careers areas of their interest. This relates directly back to career clusters and student individuality. Note that:

1. The student organizations mentioned include:
 - FBLA (Future Business Leaders of America)
 - FFA (Future Farmers of America)
 - FCCLA (Family, Career, Community Leaders of America)
 - SkillsUSA (formerly Vocational Industrial Clubs of America)
 - DECA (Distributive Education Club of America, an organization of marketing students)
 - TSA (Technology Student Association)
2. We need to be clear about the difference between “dual credit” and “dual enrollment” courses. Dual credit courses are college-level courses that are taught on the high school campus, by qualified instructors. In contrast, dual enrollment courses are college courses taken by high school students who must travel to the college campus for instruction.
3. An articulation agreement is a formal written document that specifies the process by which a high school student may earn college credit through successful completion of certain high school courses when the student achieves learning outcomes comparable to those in a college course. Dual credit and dual enrollment courses involve articulation agreements. The process allows high school students to move smoothly into postsecondary education without experiencing delay or duplication of courses.

Module Script



4. Missouri Connections (www.missouriconnections.org) provides tools for linking career-related educational opportunities with job openings.

Slide 36:

This exercise will help you link the concepts we've discussed to your particular institution/district and then work with others in your area to implement new programs.

Slide 37:

This section will help you understand and begin to develop personal plans of study for the students with whom you interact.

Slide 38:

The personal plan of study is specific to each student's career path with senior year capstone experiences and postsecondary opportunities.

Slide 39:

This is an example of a personal plan of study at the secondary level. Take a look at this example in your workbook (page 43).

Note these key components of the form:

- **Career Path:** This indicates one of the six career paths.
- **Career Cluster:** This area indicates which of the 16 career clusters applies.
- **Career Pathway:** This area indicates a more specific goal within the cluster (e.g., Agritourism, or Forestry)
- **High School Core Academics:** These are the graduation requirements needed.
- **Career Pathway Electives:** These are related to the career pathway.
- **Additional Coursework:** These courses should support the career path.
- **Signature Box:** Note that this requires "team" signatures reflecting the collaboration of student, advisor, and parent. Parent involvement is very important!

Slide 40:

This is an example of the second page of a personal plan of study, which encourages planning for the postsecondary level (also shown in your workbook on page 44). Key components are:

1. **Postsecondary Institutional Planning**, which allows you to work at various levels of postsecondary education and encourages students to choose institutions that best meet their educational and career goals.
2. **Career Enhancement Options**, which include work-based learning opportunities (allowing you to record all career-path-related work experiences) and relevant high

Module Script



school intra-curricular/co-curricular experiences (allowing you to record all career-path-related-organizational activities and experiences)

3. **Graduation Exams**, allowing you to document completion of national and state requirements.

Slide 41:

A personal plan of study facilitates personal planning by a team to help a high school student coordinate curricular and extracurricular activities to promote career development. To implement personal plans of study, we must:

- Identify interests and abilities.
- Utilize in-place programs of study to match student interest/abilities to a career pathway.
- Involve counselors, educators, students, and parents in developing the plan of study.
- Review plans annually and adjust for changes in a student's career plan.

Slide 42:

This section will help you communicate to others in your district/community how to best implement the Career Clusters Framework. It also provides you with valuable resources for further study.

Slide 43:

Career clusters bring this all together.

Slide 44:

Let's look at each of these recommendations:

1. **For the focus on school career guidance and counseling**, one way to link instruction to careers and postsecondary education is through the use of career clusters and activities to help students identify characteristics, wages, and trends for their area of interest.
2. **For the focus on rigor, relevance, and relationships in school curricula**, these ensure high expectations for all students and meaningful application of skills.
3. **For the focus on student transitions**, DESE has shared with educational leadership that each local school district will develop at least one program of study within a career cluster and pathway. (Perkins IV)
4. For the focus on high quality professional development, this is the focus needed to make the other goals a reality.

Module Script



Slide 45:

Helpful resources for further study include:

- **Missouri Connections (www.missouriconnections.org)** is a Web-based education and career planning system available at no charge to all public middle and secondary schools. Using the Career Clusters framework, it allows students to explore career options and develop personal plans of study as well as electronic portfolios.
- **Career Clusters (www.careerclusters.org)** is the Web site for the States' Career Clusters Initiative (SCCI) and features research, products, and services.
- **Missouri Center for Career Education (www.MCCE.org)** offers curriculum, professional training, and other resources for schools, teachers, and staff.
- **College Access (www.going2college.org)**, a Web site where students may find state-specific information about planning for college and careers; is supported by the Missouri Department of Higher Education.
- **Department of Elementary and Secondary Education (www.DESE.mo.gov)** offers downloadable booklets and other information about career clusters and career pathways.
- **Edutopia (www.edutopia.org)**, sponsored by the George Lucas Foundation, provides inspiring articles about innovative teaching in K-12 schools.
- **Missouri Economic Research and Information Center (www.missourieconomy.org)**, provides a student edition of the *Missouri Career Guide*, along with information and projections about in-demand occupations.
- **The Futures Channel (www.thefutureschannel.com)** connects learning with the real world through stories and short movies about people who are innovating in various fields of work.

Slide 46:

What next? Use your responses to this exercise as a “springboard” for implementing the Career Clusters Framework in your area.

Slide 47 - 48:

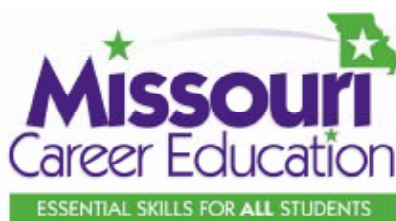
Take a few minutes to review these key points from this module.

Slide 50:

This isn't something you do alone, the academics for “programs of study” must be sequential and all individuals help students achieve his/her personal plan of study. We are in this together to improve ... improve ... improve. Thank you for your participation in Understanding the Career Clusters Framework. We hope the exercises and next-step activities provided will help you to work within your institution/district to enhance career opportunities for all students.



Module Exercises



Exercise 1: Matching Jobs to Clusters and Paths



Objective:

Identify which career clusters and paths best lead a student to become eligible for one of today's "in-demand" occupations in Missouri.

Instructions:

- Review the handout, "In-Demand Careers - Missouri" included on the next page.
- Select two occupations from the list.
- Identify the career cluster and path that matches the occupations you selected.
- Write your answers below.

Occupation	Career Cluster	Career Path

Next-Step Activity:

Share the "in-demand" occupations handout with students and/or staff with whom you interact in the next two weeks, helping them identify career clusters, paths, pathways, and knowledge/skills applicable to those occupations they select. Complete the following:

I used the "in-demand" occupations handout to discuss applicable career clusters, paths, pathways, and knowledge/skills with:

Contact 1: _____

Contact 2: _____

Exercise 2: Identifying Goals for Programs of Study



Objective:

To identify what secondary and postsecondary elements currently exist among institutions in a community/district for developing a specific career cluster program of study.

Instructions:

Using the space provided below, complete the following:

1. Select a career cluster popular with the students and/or staff members you interact with on a regular basis that leads to an industry-recognized credential, certificate, or degree.
2. Identify what articulated credit programs currently exist for secondary students to acquire postsecondary credits for that career cluster.
3. List areas where these programs need to be developed.

Selected Career Cluster: _____	
Existing Articulated Credit Programs	Articulated Credit Programs to be Developed

Next-Step Activity:

Determine two or three people within your district/community who are involved in developing articulated credit programs. Discuss your list of areas where these programs need to be developed and what actions you might be able to take to support that development.

I discussed existing and potential articulated credit programs with:

Contact 1: _____
 Contact 2: _____
 Contact 3: _____

Exercise 3: Developing a Personal Action Plan



Objective:

Identifying “next steps” in a specific district or community for implementing the Career Clusters Framework.

Instructions:

Using the space provided below, complete the following:

1. For a specific career cluster, think of possible opportunities in your area for gaining direct occupational exposure for you and secondary students.
2. List at least three businesses, institutions, or individuals to contact about gaining that exposure.
3. Identify within that cluster three ways current academic instruction might best incorporate problem-based learning in real-world environments.

Selected Career Cluster: _____	
Opportunities for Direct Occupational Exposure	Resources for Gaining Exposure
Strategies for Incorporating Problem-based Learning in Real-world Environments	
1. _____	
2. _____	
3. _____	

Next-Step Activity:

Identify those in your district or community also involved in career education (e.g., parents, educators, counselors, business leaders). Arrange an informal gathering with those you identified to get feedback on the ideas you developed in this exercise and to brainstorm additional ideas for implementation.

I obtained feedback from and brainstormed with:

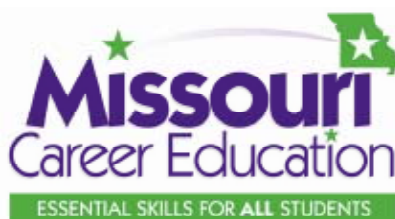
Contact 1: _____

Contact 2: _____

Contact 3: _____



Handouts



Missouri In-Demand Occupations



Leader's Guide

Occupation	Projected Need 2002-2012	Projected Growth	Annual Average Job Openings	Typical Education or Training
Registered nurses	12,010	0.24	2,250	Associate Degree
Customer service representatives	8,430	0.19	1,490	Moderate-Term On-The-Job Training
Truck drivers, heavy and tractor-trailer	7,470	0.17	1,480	Moderate-Term On-The-Job Training
General and operations managers	6,740	0.15	1,540	Bachelors or Higher Degree
Elementary school teachers, except special education	4,940	0.15	1,240	Bachelors or Higher Degree
Secondary school teachers, except special and vocational education	4,300	0.17	1,120	Bachelors or Higher Degree
Maintenance and repair workers, general	3,980	0.15	910	Moderate-Term On-The-Job Training
Medical assistants	3,940	0.58	520	Moderate-Term On-The-Job Training
Sales representatives, wholesale and manufacturing, except technical and scientific products	3,590	0.14	1,050	Moderate-Term On-The-Job Training
Carpenters	3,520	0.12	830	Long-term On-The-Job Training
Police and sheriff's patrol officers	3,390	0.29	640	Long-term On-The-Job Training
Cooks, restaurant	2,820	0.18	760	Long-term On-The-Job Training
Preschool teachers, except special education	2,690	0.24	400	License/Certification

Missouri In-Demand Occupations, Continued



Occupation	Projected Need 2002-2012	Projected Growth	Annual Average Job Openings	Typical Education or Training
Accountants and auditors	2,650	0.12	670	Bachelors or Higher Degree
Construction laborers	2,590	0.15	490	Moderate-Term On-The-Job Training
Social and human service assistants	2,580	0.48	350	Moderate-Term On-The-Job Training
Computer systems analysts	2,490	0.24	370	Bachelors or Higher Degree
First-line supervisors/managers of retail sales workers	2,490	0.06	990	Work Experience
Dental assistants	2,460	0.47	390	Moderate-Term On-The-Job Training
Chief executives	2,420	0.15	550	Bachelors or Higher Degree
Licensed practical and licensed vocational nurses	2,420	0.13	640	License/Certification
First-line supervisors/managers of food preparation and serving workers	2,380	0.15	610	Work Experience
Electricians	2,230	0.19	460	Long-term On-The-Job Training
Computer support specialists	2,220	0.22	350	Associate Degree
Automotive service technicians and mechanics	2,200	0.12	710	License/Certification
Computer software engineers, applications	2,090	0.32	270	Bachelors or Higher Degree
Lawyers	2,080	0.18	360	Bachelors or Higher Degree
Network systems and data communications analysts	1,920	0.47	240	Bachelors or Higher Degree

Missouri In-Demand Occupations, Continued



Occupation	Projected Need 2002-2012	Projected Growth	Annual Average Job Openings	Typical Education or Training
Financial managers	1,910	0.16	370	Bachelors or Higher Degree
Sales managers	1,900	0.24	340	Bachelors or Higher Degree
First-line supervisors/managers of construction trades and extraction workers	1,800	0.17	360	Work Experience
Computer and information systems managers	1,750	0.29	280	Bachelors or Higher Degree
Medical records and health information technicians	1,710	0.39	230	Associate Degree
Network and computer systems administrators	1,620	0.3	220	Bachelors or Higher Degree
Fire fighters	1,600	0.26	340	Long-term On-The-Job Training
First-line supervisors/managers of production and operating workers	1,590	0.1	490	Work Experience
Personal financial advisors	1,530	0.52	190	Bachelors or Higher Degree
Medical and health services managers	1,480	0.27	250	Bachelors or Higher Degree
Emergency medical technicians and paramedics	1,470	0.28	210	License/Certification
Pharmacy technicians	1,420	0.27	210	Moderate-Term On-The-Job Training
Child, family, and school social workers	1,380	0.21	250	Bachelors or Higher Degree
First-line supervisors/managers of mechanics, installers, and repairers	1,360	0.13	390	Work Experience
Pharmacists	1,360	0.28	230	Bachelors or Higher Degree

Missouri In-Demand Occupations, Continued



Occupation	Projected Need 2002-2012	Projected Growth	Annual Average Job Openings	Typical Education or Training
Plumbers, pipefitters, and steamfitters	1,350	0.14	360	Long-term On-The-Job Training
Operating engineers and other construction equipment operators	1,340	0.15	360	Moderate-Term On-The-Job Training
Loan officers	1,310	0.2	240	Bachelors or Higher Degree
Recreation workers	1,300	0.21	270	Bachelors or Higher Degree
Middle school teachers, except special and vocational education	1,250	0.08	450	Bachelors or Higher Degree
Sales representatives, wholesale and manufacturing, technical and scientific products	1,200	0.15	330	Moderate-Term On-The-Job Training
Computer software engineers, systems software	1,180	0.36	150	Bachelors or Higher Degree
Executive secretaries and administrative assistants	1,150	0.04	610	Moderate-Term On-The-Job Training
Welders, cutters, solderers, and brazers	1,130	0.12	370	Long-term On-The-Job Training
First-line supervisors/managers of office and administrative support workers	1,130	0.04	790	Work Experience
Construction managers	1,120	0.15	250	Bachelors or Higher Degree
Self-enrichment education teachers	1,120	0.34	150	Work Experience
Heating, air conditioning, and refrigeration mechanics and installers	1,100	0.26	170	Long-term On-The-Job Training
Kindergarten teachers, except special education	1,090	0.26	160	Bachelors or Higher Degree

Missouri In-Demand Occupations, Continued



Occupation	Projected Need 2002-2012	Projected Growth	Annual Average Job Openings	Typical Education or Training
Management analysts	1,070	0.15	210	Bachelors or Higher Degree
Property, real estate, and community association managers	1,000	0.2	190	Bachelors or Higher Degree
Coaches and scouts	990	0.18	210	Long-term On-The-Job Training
Administrative services managers	960	0.15	220	Bachelors or Higher Degree
Dental hygienists	960	0.47	110	Associate Degree
Education administrators, elementary and secondary school	950	0.2	210	Bachelors or Higher Degree
Radiologic technologists and technicians	930	0.25	170	Associate Degree
Training and development specialists	920	0.2	160	Bachelors or Higher Degree
Paralegals and legal assistants	920	0.28	120	Associate Degree
Painters, construction and maintenance	910	0.11	210	Moderate-Term On-The-Job Training
Fitness trainers and aerobics instructors	910	0.26	170	License/Certification
Cement masons and concrete finishers	900	0.26	160	Moderate-Term On-The-Job Training
Clergy	840	0.14	210	Bachelors or Higher Degree
Securities, commodities, and financial services sales agents	840	0.16	140	Bachelors or Higher Degree
Physical therapists	810	0.28	110	Bachelors or Higher Degree
Bus and truck mechanics and diesel engine specialists	800	0.13	240	License/Certification

Missouri In-Demand Occupations, Continued



Occupation	Projected Need 2002-2012	Projected Growth	Annual Average Job Openings	Typical Education or Training
First-line supervisors/managers of housekeeping and janitorial workers	780	0.14	210	Work Experience
Legal secretaries	770	0.18	160	License/Certification
Medical secretaries	760	0.11	200	License/Certification
Public relations specialists	760	0.27	120	Bachelors or Higher Degree
Sheet metal workers	750	0.15	190	Moderate-Term On-The-Job Training
Food service managers	750	0.11	180	Work Experience
Claims adjusters, examiners, and investigators	750	0.14	140	Long-term On-The-Job Training
Database administrators	740	0.35	100	Bachelors or Higher Degree
Cost estimators	720	0.16	170	Work Experience
Mental health and substance abuse social workers	710	0.32	110	Bachelors or Higher Degree
Medical and public health social workers	680	0.25	110	Bachelors or Higher Degree
Machinists	670	0.07	280	Long-term On-The-Job Training
Medical transcriptionists	670	0.27	110	License/Certification
Medical and clinical laboratory technicians	650	0.15	180	Associate Degree
Respiratory therapists	640	0.32	130	Associate Degree
Insurance sales agents	640	0.07	270	Bachelors or Higher Degree
Marketing managers	630	0.14	140	Bachelors or Higher Degree
Social and community service managers	630	0.19	130	Bachelors or Higher Degree
Roofers	610	0.15	160	Moderate-Term On-The-Job Training

Missouri In-Demand Occupations, Continued



Occupation	Projected Need 2002-2012	Projected Growth	Annual Average Job Openings	Typical Education or Training
Medical and clinical laboratory technologists	610	0.18	160	Bachelors or Higher Degree
Musicians and singers	590	0.17	130	Long-term On-The-Job Training
Drywall and ceiling tile installers	580	0.22	120	Moderate-Term On-The-Job Training
Chefs and head cooks	580	0.15	170	Work Experience
Automotive body and related repairers	580	0.12	160	Long-term On-The-Job Training
Employment, recruitment, and placement specialists	570	0.14	120	Bachelors or Higher Degree
Educational, vocational, and school counselors	550	0.12	160	Bachelors or Higher Degree
Graphic designers	520	0.12	110	Bachelors or Higher Degree
Brickmasons and block-masons	500	0.11	120	Long-term On-The-Job Training
Structural iron and steel workers	500	0.17	110	Long-term On-The-Job Training
Computer programmers	480	0.04	330	Bachelors or Higher Degree
Dispatchers, except police, fire, and ambulance	470	0.1	150	Moderate-Term On-The-Job Training
Demonstrators and product promoters	470	0.16	110	Moderate-Term On-The-Job Training
Rehabilitation counselors	460	0.13	130	Bachelors or Higher Degree
Purchasing agents, except wholesale, retail, and farm products	420	0.1	150	Work Experience
Billing and posting clerks and machine operators	420	0.04	230	Moderate-Term On-The-Job Training
Industrial machinery mechanics	400	0.13	100	Long-term On-The-Job Training

Missouri In-Demand Occupations, Continued



Occupation	Projected Need 2002-2012	Projected Growth	Annual Average Job Openings	Typical Education or Training
Laundry and dry-cleaning workers	400	0.06	210	Moderate-Term On-The-Job Training
Industrial production managers	390	0.1	120	Bachelors or Higher Degree
Cutting, punching, and press machine setters, operators, and tenders, metal and plastic	380	0.05	200	Moderate-Term On-The-Job Training
First-line supervisors/managers of police and detectives	380	0.18	110	Work Experience
Civil engineers	380	0.11	100	Bachelors or Higher Degree
Molding, coremaking, and casting machine setters, operators, and tenders, metal and plastic	370	0.1	130	Moderate-Term On-The-Job Training
Industrial engineers	360	0.1	120	Bachelors or Higher Degree
Slaughterers and meat packers	330	0.1	110	Moderate-Term On-The-Job Training
Engineering managers	330	0.09	100	Bachelors or Higher Degree
Bakers	320	0.1	110	Long-term On-The-Job Training
Vocational education teachers, secondary school	310	0.09	130	Bachelors or Higher Degree
First-line supervisors/managers of helpers, laborers, and material movers, hand	300	0.09	110	Work Experience
Librarians	300	0.08	120	Bachelors or Higher Degree

Missouri In-Demand Occupations, Continued



Occupation	Projected Need 2002-2012	Projected Growth	Annual Average Job Openings	Typical Education or Training
First-line supervisors/managers of transportation and material-moving machine and vehicle operators	300	0.08	110	Work Experience
Telecommunications line installers and repairers	280	0.08	120	Long-term On-The-Job Training
Inspectors, testers, sorters, samplers, and weighers	250	0.03	240	Moderate-Term On-The-Job Training
Extruding and drawing machine setters, operators, and tenders, metal and plastic	240	0.1	100	Moderate-Term On-The-Job Training
Cabinetmakers and bench carpenters	240	0.06	130	Long-term On-The-Job Training
Insurance claims and policy processing clerks	230	0.04	120	Moderate-Term On-The-Job Training
Mechanical engineers	190	0.06	100	Bachelors or Higher Degree
Electrical power-line installers and repairers	160	0.06	100	Long-term On-The-Job Training
Payroll and timekeeping clerks	120	0.03	120	Moderate-Term On-The-Job Training
First-line supervisors/managers of non-retail sales workers	100	0.01	180	Work Experience

Foundation Knowledge & Skills

- Natural Resources Agriculture
- Human Services
- Industrial & Engineering Technology
- Health Services
- Arts & Communication
- Business, Management & Technology

Project funded by the U.S. Department of Education (VO518020001)

Sample Personal Plan of Study

Date: _____
Student Name: _____
Student Signature: _____
Advisor Signature: _____
Parent/Guardian Signature (if required): _____

PERSONAL PLAN OF STUDY

Career Path: Natural Resources/ Agriculture
Career Cluster: Agriculture, Food & Natural Resources
Career Pathway:

9 th Grade	10 th Grade	11 th Grade	12 th Grade*
English I	English II	English III	English IV
Algebra I or Geometry	Geometry or Algebra II	Algebra II, Trigonometry or Pre-Calculus	Trigonometry, Pre-Calculus or Calculus
Physical Science or Biology I	Biology I or Chemistry I	Chemistry I, Physics, or Environmental Science	Physics, AP Biology or Environmental Science
Geography/State History	World History	American History	Economics/Government
PE/Health or Fine Arts	PE/Health or Fine Arts		Personal Finance
			Practical Art (if needed)
Career Pathway Elective(s) Agricultural Science I	Career Pathway Elective(s) Agricultural Science II	Career Pathway Coursework:	
Additional Coursework Foreign Language or Computer Technology	Additional Coursework Foreign Language or Computer Technology	Agribusiness Sales/Marketing/Management Agricultural Construction Agricultural Machinery Agricultural Management & Economics Agricultural Power I Agricultural Power II Agricultural Structures Animal Science Conservation of Natural Resources Crop Science	
		Floriculture Food Science and Technology Forest Management Fruit and Vegetable Production Greenhouse Operation & Management Landscaping Nursery Operation & Management Processing/Marketing Forestry Products Supervised Agricultural Experience Co-op Turf Management	



Sample Personal Plan of Study, Continued



	Area Career Center	Community College	College/University	Other
Postsecondary	☐ Farm Diesel Equipment ☐ Horticulture	☐ Agricultural Business ☐ Agricultural Mechanics ☐ Biotechnology ☐ Commercial Turf & Golf Course Management ☐ Custom Application Technology ☐ Equine Science ☐ Farm Management ☐ Horticulture ☐ Natural Resources ☐ Veterinary Technology	☐ Agricultural Business Management ☐ Agricultural Economics ☐ Agricultural Education ☐ Agricultural Journalism ☐ Agricultural Systems Management ☐ Agriculture, General ☐ Biochemistry ☐ Education ☐ Fisheries and Wildlife ☐ Food Science and Nutrition ☐ Forestry ☐ Hotel and Restaurant Management ☐ Parks, Recreation, and Tourism ☐ Plant Science ☐ Soil and Atmospheric Sciences	☐ Apprenticeship ☐ Military ☐ On-the-Job Training
	Work-based Learning Opportunities	Relevant High School Intra-Curricular/Co-Curricular Experiences		
	After School Employment	Career and Technical Student Organization:		
	Cooperative Occupational Experience	FFA		
	Internship/Mentorship	Other high school activities:		
	Job Shadowing			
	On-The-Job Training			
	Service Learning			
	Supervised Agricultural Experience (required)			
Career Enhancement Options		Graduation Exams		
		___ U.S. Constitution		
		___ MO Constitution		

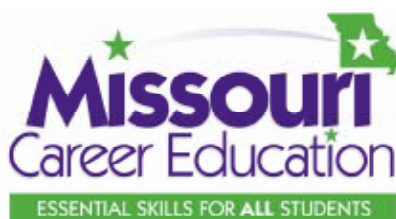
Adapted from National Career Cluster

*12th grade year should include at least 3 academic courses including college prep math or science.

Note: All Career and Technical Education courses count as a practical arts credit.



Evaluation Forms



Participant Evaluation



Leader Instructions:

The evaluation form below shown below should be used in instructor-led workshop settings for the module. You can download a pdf version of this form to be printed and distributed at the end of the workshop (at www.missouricareereducation.org/project/pos).

Workshop Participant Evaluation Understanding the Career Clusters Framework

Date: _____ **Your School District:** _____

Your Job Title: ☐ Administrator ☐ Teacher ☐ Counselor ☐ Other _____

Institution Type: ☐ Elementary ☐ Middle School ☐ Comprehensive High School
☐ Career Center ☐ Community College ☐ 4-Year College/University

Please rate each of the following statements.	Agree	Neutral	Disagree
1. The content was valuable and appropriate.			
2. The materials were sufficient to support the learning tasks and understanding of the topic.			
3. The content of this module will increase my knowledge and skills in my educational role.			

Complete the following statements.

4. With what I've learned from this module, I can help impact student achievement in my educational setting by:

5. I now have a better understanding of:

6. The knowledge or skill(s) I gained from this presentation will enable me to:

7. I would be interested in (mark all that apply):

☐ Additional information about the content of this module.

☐ Follow-up training in respect to the content of this module.

☐ On-going technical implementation support in respect to the content of this module.

Please contact me at: _____

Comments:

Leader Evaluation



Leader Instructions:

Complete the evaluation form shown below by downloading and printing the pdf version or by using the online version (at www.missouricareereducation.org/Project/pos). This form facilitates our understanding of how well this module meets your needs as a facilitator as well as a summary of the workshop participants' perceptions. We appreciate your input about this module and knowing what additional assistance we can provide.

Workshop Leader Evaluation and Summary of Participant Evaluations: Understanding the Career Clusters Framework

Date: _____ **Your School District:** _____

Your Job Title: ☐ Administrator ☐ Teacher ☐ Counselor ☐ Other _____

Institution Type: ☐ Elementary ☐ Middle School ☐ Comprehensive High School
☐ Career Center ☐ Community College ☐ 4-Year College/University

Number of Workshop Participants: _____

Audience Demographics: Please describe your target audience. _____

Workshop Duration _____ **& Time:** ☐ Before school ☐ After school ☐ Staff development day

Part One: (Provide input on module materials)

A. Quality of the Content

Please rate the quality of each of the following components.	High	Average	Low
1. PowerPoint slides			
2. Talking Points script			
3. Leader's Guide information			
4. Participants' Workbook			

B. Usability of the Module Materials

Please indicate "agree" or "disagree" or "neutral" for each statement.	Agree	Neutral	Disagree
5. The materials were easy to access from the MCCE Web site.			
6. Appropriate and necessary information is provided to allow an individual to prepare for and deliver and workshop presentation.			
7. The amount of information included was "just right" for a workshop presentation.			
8. More information was needed to make the presentation effective.			

Leader Evaluation, Continued



C. Overall Presentation

9. Describe what worked well (materials, activities) in your presentation:

10. Describe what—if anything—did not work well (materials, activities) in your presentation:

11. Describe what you would do differently if you presented this module as a workshop again:

Part Two: (Summarize workshop participants' evaluations.)

A. How many individuals participated in the workshop presentation? _____ (enter #)

Enter the total number of responses in each category.	Agree	Neutral	Disagree
1. The content was valuable and appropriate.			
2. The materials were sufficient to support the learning tasks and understanding of the topic.			
3. The content of this module will increase my knowledge and skills in my educational role.			

Leader Evaluation, Continued



B. Provide sample responses from the participants' evaluation:

4. The knowledge or skill that I learned from this module will impact student achievement in my educational setting in this way:

5. I now have a better understanding of:

6. The knowledge or skill I learned from this presentation will enable me to:

C. Enter the total number of responses for each choice.

7. I would be interested in (mark all that apply):

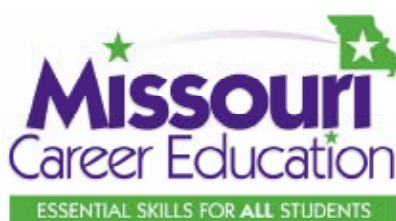
- ☐ _____ Additional information about the content of this module.
- ☐ _____ Follow-up training in respect to the content of this module.
- ☐ _____ On-going technical implementation support in respect to the content of this module.

Please contact me at: _____

D. Share any relevant comments:



Appendices



Appendix A: Glossary



- **Academic Standards** — Standards that address the understanding and competency students should attain
- **Active Learning Instructional Strategies** — Teacher facilitation of relevant learning tasks that challenge students to discover content in-depth and to apply facts, concepts, and procedures while analyzing, evaluating, and creating
- **Advanced Placement** — Rigorous courses designed to provide college-level coursework to secondary students; exemplary scores on the standardized Advanced Placement assessment may be awarded postsecondary credit
- **Articulation Agreements** — A written agreement between educational institutions that specifies the process by which a student may receive course credit or advanced standing for knowledge, skills, and abilities previously mastered at the sending institution as a result of aligned curriculum
- **Articulation Model** — An example of a standardized agreement between educational institutions where the receiving institution grants a student credit or advanced standing for knowledge, skills, and abilities previously mastered at the sending institution as a result of aligned curriculum
- **Capstone Experience** — A learning task in which students must integrate special studies with a major area of emphasis and extend, critique, and apply knowledge gained in the major
- **Career Clusters** — An organizing framework that groups occupations and careers based on common knowledge and skills
- **Career Development** — Self-development over the life span through the integration of life roles, settings, and events
- **Career Path** — A broad category of curricula and educational activities targeted at a student's academic and career goals
- **Career Pathway** — Listing of occupations that share advanced technical skills and/or common roles within a career cluster
- **Career-based Learning** — Structured learning experiences that integrate grade-appropriate, career-based activities with classroom instruction.
- **Character Education** — Educational programming that targets the development of positive human qualities in an individual that are good for both the individual and for society

Glossary, Continued



- **Dual Credit** — College-level courses taught on the high school campus by qualified instructors
- **Dual Enrollment** — College courses taken by high school students who must travel to the college campus for instruction
- **Emotional Intelligence** — The ability to perceive and express emotion, assimilate emotion in thought, understand and reason with emotion, and regulate emotion in the self and others (Mayer & Salovey, 1997)
- **High Schools That Work (HSTW)** — The first SREB school-improvement initiative, where Goals and Key Practices emphasize the importance of relationships for student success
- **Integration** — The process of combining rigorous academic content and real world applications in a seamless and meaningful way
- **International Baccalaureate** — A program offering rigorous curriculum that emphasizes development of inquiry, knowledge, and intercultural understanding and respect and allowing secondary IB students completing a two-year program of studies to qualify for a prestigious IB diploma recognized by universities worldwide
- **Internship** — Any formal program (with or without course credit) that provides practical experience for beginners in an occupation or profession; courses that often provide specific training plans and assignments to enhance the practical experience and are supervised by a trained, certificated instructor and an employer
- **Job Shadowing** — The act of observing a person engaged in everyday on-the-job activities to learn about the person's career choice and if it is appealing to the observer; typically a short-term experience, which sometimes involves the observer in some job tasks
- **Knowledge and Skills** — What people need to know and be able to do in specific careers, which integrates grade-appropriate, career-based activities with classroom instruction to apply and advance student knowledge in academic areas while learning occupational skills
- **Making Middle Grades Work** — A middle school initiative of the Southern Regional Education Board (SREB)
- **Measurement Criteria** — Items under each Performance Element that clarify what is to be measured and level of performance expected
- **Mentoring** — A formal process through which an experienced person (mentor) provides support and guidance to a less experienced colleague (mentee/protégé)

Glossary, Continued



- **Model Schools Initiative** — A program that furthers the aim of increasing rigor, relevance, and relationships in educational institutions with member schools demonstrating student success
- **Performance Elements** — Measurable instructional components that represent a single outcome behavior, support knowledge and skills statements, reflect high expectations/rigor, and use all levels of Bloom's Taxonomy, as appropriate
- **Performance Standards** — Standards that identify what a student needs to do to demonstrate the knowledge and skills required to meet achievement indicators
- **Personal Plan of Study** — A student's scope and sequence of coursework and co-curricular experiences based on chosen educational and career goals; relies on the school's implementation of a Program of Study
- **Problem-based Learning (PBL)** — Focused, experiential learning (minds-on, hands-on) organized around the investigation and resolution of messy, real-world problems; curriculum that provides authentic experiences fostering active learning, supporting knowledge construction, naturally integrating school learning and real life, addressing state and national standards, and integrating disciplines
- **Professional Learning Communities** — Faculty organized into learning teams focused on student achievement
- **Program of Study** — Coherent, rigorous, and relevant content aligned with challenging academic standards in a coordinated, non-duplicative progression of courses and co-curricular experiences that align secondary education with postsecondary education
- **Project Lead the Way** — A program that promotes engineering careers through the relationship of partner institutions: middle schools, high schools, higher education, and the private sector
- **Project-based Learning** -- A process in which students investigate rich and challenging issues and topics, often in the context of real-world problems, integrating subjects such as science, mathematics, history, and the arts (Edutopia, 2002, p.3)
- **Relationships** — Four critical learning connections formed in schools: (1) Among students, parents, peers; (2) Among staff members; (3) Among teachers with others in their profession; and (4) Between the school and the community (parents, businesses, community leaders)
- **Relevance** — Learning experiences in which students apply core knowledge, concepts, or skills to solve real-world problems

Glossary, Continued



- **Remediation** — The correction or strengthening of skills, especially academic skills required for post-secondary success, through programs designed to target specific deficits by offering instruction to increase skill attainment and boost student achievement
- **Rigor** — Learning experiences that foster cognitive skills in which students demonstrate a thorough, in-depth mastery of challenging tasks
- **Service Learning** — An educational experience in which students participate in community-based, volunteer projects that strengthen the understanding of course content and reinforce the development of citizenship and civic responsibility
- **Small Learning Communities** — A structure that fosters relationships among students and staff and encourages personal interactions not possible in larger settings
- **Summer Bridge Programs** — Programs designed to ease the ninth grade transition into high school; experiences may include academic remediation/enhancement and high school orientation activities
- **Tech Prep** — A non-duplicative, sequential course of study that combines a minimum of two years of secondary education with a minimum of two years of postsecondary education or an apprenticeship program of not less than two years following secondary education; also integrates academic and career and technical education instruction, and utilizes work-based and worksite learning experiences, where appropriate and available
- **Technology Centers That Work (TCTW)** — An enhancement of the HSTW framework that focuses on literacy and student readiness for work and postsecondary education with each TCTW site developing a close relationship with a partner HSTW site
- **Transitions** — The successful advancement of students from middle school to secondary school, secondary to postsecondary education, and from postsecondary education to the world of work
- **Work-based Learning** — An instructional approach that offers a range of experiences, such as job shadowing, internships, and other similar arrangements between schools, students, and employers to provide students with connections between classroom learning and the workplace
- **Work-site Learning** — An educational approach that uses the actual worksite to provide students with a context for connecting classroom-taught knowledge and skills to real-life work experiences

Appendix B: Resource Links



- **Achieve (www.achieve.org)** was created by the nation's governors and business leaders, to help states raise academic standards and achievement so that all students graduate ready for college, careers, and citizenship.
- **College Access (www.going2college.org)** is a Web site where students may find state-specific information about planning for college and careers; supported by the Missouri Department of Higher Education.
- **Career Clusters (www.careerclusters.org)** is the Web site for the States' Career Clusters Initiative (SCCI), features research, products, and services.
- **Career and College Transition Initiative (www.league.org/league/projects/ccti/purpose.html)** is a key resource is the League for Innovation in the Community College (<http://www.league.org>), an international organization serving community colleges. Among the League's projects is the Career and College Transition Initiative (CCTI), which is a federally funded project in cooperation with several nationally recognized partner organizations.
- **Career One Stop (www.careeronestop.org)** is a site sponsored by the US Department of Labor that offers career resources and workforce information for students and job seekers.
- **College Access (www.going2college.org)** is a Web site where students may find state-specific information about planning for college and careers; supported by the Missouri Department of Higher Education.
- **Department of Elementary and Secondary Education (www.DESE.mo.gov)** offers downloadable booklets and other information about career clusters and career pathways.
- **Edutopia (www.edutopia.org)**, sponsored by the George Lucas Foundation, provides inspiring articles about innovative teaching in K-12 schools.
- **High Schools That Work (www.sreb.org/Programs/hstw/hstwindex.asp)** is the largest and oldest of the Southern Regional Education Board's (SREB) school improvement initiatives for high school and middle grades leaders and teacher. The site allows users to register for conferences and workshops, obtain copies of publications, read about exemplary school and classroom practices, find a schedule for technical assistance visits to member schools, and learn how SREB collects data on students' academic achievement.
- **Missouri Center for Career Education (www.MCCE.org)** offers curriculum, professional training, and other resources for schools, teachers, and staff.
- **Missouri Connections (www.missouriconnections.org)** is a Web-based education and career planning system available at no charge to all public middle and secondary schools. Using the Career Clusters Framework, it allows students to explore career options and develop personal plans of study as well as electronic portfolios.

Resource Links, Continued



- **Missouri Economic Research and Information Center** (www.missourieconomy.org) provides a student edition of the Missouri Career Guide, along with information and projections about in-demand occupations.
- **Model Schools Initiative, a program of the International Center for Leadership in Education** (www.leadered.com), offers a wealth of information related to rigor and relevance in learning.
- **Project Lead the Way** (www.pltw.org) is a not-for-profit organization that promotes pre-engineering courses for middle and high school students. PLTW forms partnerships with public schools, higher education institutions and the private sector to increase the quantity and quality of engineers and engineering technologists graduating from our educational system. The site offers resources for school certification, assessment, and program evaluation.
- **The Futures Channel** (www.thefutureschannel.com) connects learning with the real world through stories and short movies about people who are innovating in various fields of work.