A Guide for Implementing Programs of Study in Wisconsin

Based upon the National Career Cluster & Pathway Framework

WISCONSIN'S TECHNICAL COLLEGES

WISCONSIN DEPARTMENT OF PUBLIC INSTRUCTION

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Foreword

Every child must graduate ready for further education and the workforce. Implementation of programs of study in schools across Wisconsin provides a framework to deliver rigorous and relevant curriculum that prepare students for success in the 21st century.

The Program of Study Implementation guide contains key components like *Teaching and Learning*; *School Counseling and Academic Advising*; *Partnerships*; and *Skill Attainment*. These are critical pieces to the bigger puzzle of creating a program of study rooted in content knowledge, skill development, business and industry partnerships, and secondary and post-secondary collaboration.

The impact of career and technical education courses changes lives and will inspire a workforce for the 21st Century. This guide will serve as a valuable resource to build quality programs that provide sustainable, systemic change in districts that advance Wisconsin's workforce and economy through education.

Tony Evers, PhD, State Superintendent
Wisconsin Department of Public Instruction

Throughout the System's 100-year history, Wisconsin's 16 technical colleges have forged strong local partnerships with business and industry, as well as strong collaborations with area PK-12 districts. One result has been a solid foundation for the adoption of a Career Clusters framework and the development of clear, flexible Programs of Study.

Successful implementation of the resulting Career Pathways will ensure not only those educational offerings continue to align with industry needs, but that students see a clear path to the future and are positioned for success in the classroom and the workplace.

Dan Clancy, President
Wisconsin Technical College System

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SECTION I - INTRODUCTION

Who is this guide for?

This guide is written to assist secondary and post-secondary education professionals in creating sustained, systemic change through programs of study, connecting secondary schools with post-secondary instructional programs and 21st century careers. In this critically important work, education professionals must collaborate and leverage our resources at all levels to realize long-term, sustainable gains. Education professionals must also ensure that Pathways initiatives are done exceedingly well, incorporating continuous improvement mechanisms at each phase. "Career pathways, done well, don't just build workforces. They change lives." (McClenney, 2006)

Education professionals range from secondary to post-secondary, from administration to student services, from career and technical educators to occupational instructors to academic teachers. Stakeholders are community, business and industry individuals and groups with a specific interest in advancing Wisconsin's workforce and economy through education.

What is the purpose of this Guide?

The primary focus of **A Guide for Implementing Programs of Study in Wisconsin** is to demonstrate how PK-12 teams and post-secondary educational leaders and employers collaborate to facilitate effective PK-12 preparation and subsequent transition into post-secondary coursework and into careers. The basis of this work will be rooted in the National Career Clusters and Pathways Model, which is explained in detail in the following sections. The implementation guide provides Wisconsin context for the *Ten Key Components* of the Rigorous Program of Study (POS) Framework designed by the United States Department of Education. Programs of Study are for all students PK through 16 and beyond. The standard time assumptions are traditional semesters and academic years, etc., however, as schools are redesigned, Programs of Study are flexible enough to accommodate multiple learning structures. This guide will help make the process of POS design, development, and implementation much more beneficial for school partnerships to accomplish.

How is This Guide Organized?

This guide is organized based on recommendation from local educators. The first section is a short overview of the models and framework. The second section provides planning tools in brief format for those who are ready to take action. The third section goes into deeper discussion of each of the components. The fourth section includes resources. This is expected to be a living document available on the internet. As such we hope that educators will submit numerous tools, examples and artifacts to share with others (see the template for sharing in the appendix). Newcomers to these concepts will want to start with sections 1 and 3 and then work with section 2. Those ready to begin development or enhancement of a POS will start with section 2.

Why are Career Clusters and Career Pathways Important?

Career Clusters—The 16 **Career Clusters** provide a context for learning the skills specific to a career, and provide a structure for organizing or restructuring curriculum offerings and focusing coursework with a common theme such as an interest. **Career Clusters:**

- provide a framework for continuing contemporary, high-quality programs of college and career preparation;
- provide a framework for seamless education from high school through post-secondary;
- provide more career and educational options for students;
- provide a framework for organizing and reorganizing the delivery of career and technical education and needed 21st century skills;

- provide understanding of knowledge and skill transfer as well as verification of qualification.

The 79 **Career Pathways** breakdown the 16 Career Clusters into career groupings with shared knowledge, skills, and dispositions required to be successful in careers within the pathway. They are the core of workforce and economic development in Wisconsin. **Career Pathways:**

- promote the connection between education and workforce/economic development;
- offer a seamless transition from high school to career or occupation preparation;
- focus on high skill, high demand, and high wage careers;
- provide a plan for attainment of a technical skill proficiency, and a degree/credential.

Career Pathways are critical to 21st Century schools and learners. Each pathway is grounded in a set of four guiding principles:

1. **Career Pathways prepare students for post-secondary education and careers.** A Pathway is always about both objectives; it's never a choice between one or the other. The probability of making a living wage in today's economy without some form of post-secondary education is already low and will only diminish. Increasingly, career success depends on post-secondary education and gaining and regaining formal credentials—a certificate, associate's degree, bachelor's degree, or higher level of achievement. Gone are the days when high schools could be content to prepare some students for college and others for work.

2. **Career Pathways connect academics to real-world applications.** Each Pathway integrates challenging academics with a demanding career and technical educational curriculum. Pathways alter how core academic subjects are taught; they do not lower expectations about what is taught. Through the Pathways approach, students are expected to achieve at high levels in mathematics, science, English, social studies, and world languages. Students master these subjects through the power of real-world application—their learning is challenged by authentic problems and situations that are part of the modern workplace. Students also have the opportunity to be part of work-based learning and youth apprenticeship, both of which lead to industry based credentials.

3. **Career Pathways lead to the full range of post-secondary opportunities.** Pathways prepare students for all the avenues they might pursue following high school graduation—two- and four-year college, certification programs, apprenticeships, formal job training, and military service. Each Pathway represents a broad industry theme that can appeal to and engage a student regardless of prior academic achievement and post-secondary aspirations. Pathways can eliminate current practices that sort and track high school students in ways that limit options after high school. With careful attention, pathways can ensure that all students from all backgrounds and experiences can succeed in the future workforce. Core skills to be addressed through Pathways include cultural understanding and competence, global and diversity awareness, and fairness/inclusiveness skills for students. A stronger workforce and a vibrant economy is based on diverse contributions and perspectives, and social justice for all in our communities.

4. **Career Pathways improve student achievement.** Pathways and Programs of Study are based on accountability. They are designed to produce higher levels of achievement in a number of measurable arenas, including academic and technical scores, high school completion, post-secondary transitions to career and education, and attainment of a formal post-secondary credential. They also contribute, in ways that most conventional academic and career and technical education curricula do not, to increase student proficiency in vital areas such as creativity and innovation; critical thinking and problem solving;

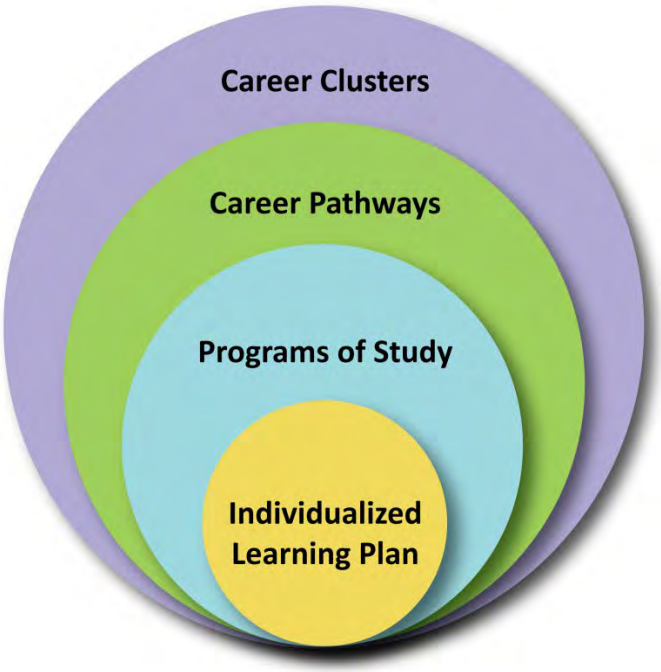
communication; collaboration; diversity competence; creativity and problem solving; and media and information literacy. Finally, Pathways make an immediate difference—helping young people gain higher earnings right after high school and giving students a leg up in the labor market while pursuing post-secondary education.

Career Cluster Framework:

The career cluster framework provides a sequential path for students to take a career interest and develop it into job potential. The 16 broad career clusters are broken down into 79 specific pathways. Students will be able to learn about multiple careers within each pathway and choose one program of study available in their school, which will be developed through the process laid out in this manual. That POS will be tied to community needs, specific partnerships, and a sequence of courses which will provide a channel for students to move seamlessly from high school to a post-secondary institution. The POS becomes a foundation for each students' Individual Learning Plan, which is a portfolio of student accomplishment in preparation for post-secondary education or the work force.

The following graphic is a detailed look at how all these pieces fit together.

Career Cluster Framework



Example

Career Cluster- Manufacturing

Career Pathway- Maintenance Installation and Repair

Program of Study-Electro-Mechanical

Individual Learning Plan- A plan for coursework related artifacts, and experience from 8th grade through 14 and beyond

Career Clusters are broad occupational groupings based on a set of common *knowledge and skills* required for a broad group of careers. Wisconsin has adopted the National 16 Career Clusters that also serve as a tool for organizing curriculum and instruction. Career clusters provide opportunities for all students regardless of their career goals and interests. They are a tool for a seamless educational system that blends rigorous

academic/technical preparation, provides career development, offers options for students to experience all aspects of a business or industry, and facilitates/assists students and educators with ongoing transitions.

Career Pathways are a sub-grouping of careers used as an organizing tool for curriculum design and instruction. Similar to career clusters, career pathways are grouped based on their requirements for a set of core and similar knowledge and skills for career success. Each pathway highlights a specific part of each cluster. An easy example of this can be seen in the Agriculture, Food and Natural Resources cluster. Seven different pathways, from Animal to Plant Systems highlight the variety of interests that each cluster holds for students.

A **Program of Study** is a specific career pathway, defined by a local school/district partnership, which is a sequence of instruction based on recommended standards and knowledge and skills, consisting of coursework, co-curricular activities, worksite learning, service learning and other learning experiences including Career and Technical Student Organizations (CTSO). The sequence of instruction provides preparation for a career.

An **Individualized Learning Plan** (**ILP**) includes a program of study and learning that represents a fluid, living, breathing, mapped academic plan reflecting a student's unique set of interests, needs, learning goals, and graduation requirements. It goes beyond the "four-year plan" by recording the student's connections to the larger community including examples of community service and volunteerism; membership in community organizations; participation in leadership activities outside of school; involvement in job shadowing, mentorships, and/or apprenticeships; and the pursuit of skill development through hobbies, athletics, and fine arts. See the school counseling and advising component for more information on the ILP. The Wisconsin Department of Public Instruction has created a power point outlining requirements of a sample ILP. This link can be found at: http://sspw.dpi.wi.gov/sspw_counsl1

Wisconsin's Sixteen Career Clusters and the Seventy-nine Career Pathways-2010

Agriculture, Food and Natural Resources

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

Architecture and Construction

Construction
Design/Pre-Construction
Maintenance/Operations

Arts, Audio/Video Technology and Communications

Audio and Video Technology and Film
Journalism and Broadcasting
Performing Arts
Printing Technology
Telecommunications
Visual Arts

Business Management and Administration

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

Education and Training

Administration and Administrative Support
Professional Support Services
Teaching/Training

Finance

Accounting
Banking Services
Business Finance
Insurance
Securities and Investments

Government and Public Administration

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

Health Science

Biotechnology Research and Development
Diagnostic Services
Health Informatics
Support Services
Therapeutic Services

Hospitality and Tourism

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

Human Services

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

Information Technology

Information Support and Services
Network Systems
Programming and Software Development
Web and Digital Communications

Law, Public Safety, Corrections and Security

Correction Services
Emergency and Fire Management Services
Law Enforcement Services
Legal Services
Security and Protective Services

Manufacturing

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

Marketing

Marketing Communications
Marketing Management
Marketing Research
Merchandising
Professional Sales

Science, Technology, Engineering and Mathematics

Engineering and Technology
Science and Math

Transportation, Distribution and Logistics

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

The Ten Components

The Ten Components of POS implementation offered in this guide are from those published by the Office of Vocational and Adult Education (OVAE), U.S. Department of Education. OVAE's components are developed in collaboration with major national associations, organizations, and states. Please see the appendix for the chart of the 10 Components, provided by OVAE.

These components are like building a brick foundation—each component is important and provides part of the foundation needed for a successful framework for Program of Study Implementation in Wisconsin. Working through the framework, educators can build a successful program of study.

SECTION II - PROGRAM OF STUDY IMPLEMENTATION PLAN

Putting It All Together

Understanding the *Ten Components* is the first step in implementing a Program of Study; however, many education professionals may ask, "What's next?" or "How do I do it?"

The challenge in putting this guide together was to outline a process while realizing that the process is not necessarily sequential. Components can be used multiple times in numerous areas of implementation. A good exercise to start with in any setting is a self study or survey to determine where the school district is in terms of incorporating the *Ten Components* into the phases outlined in this guide.

POS Implementation may start in a variety of settings—perhaps at a high school, a Cooperative Educational Service Agency (CESA), a technical college or an industry-based organization. For further information on stakeholder groups and contacts, please see appendix on page 63. Utilizing this guide, the creation of a program of study can be successful regardless of where the Program of Study Implementation begins.

This section will outline five phases of the POS Implementation process. Each phase will identify the relevant components of the OVAE National Model of Program of Study Implementation. Further, each phase will contain action steps across three levels of development a Program of Study requires. These levels are Developmental, Implementation and Refinement. There are five basic phases of work in implementing a program of study.

A. **Laying the Groundwork**- Researching best practices and collecting data about model programs of study based on local labor market information.

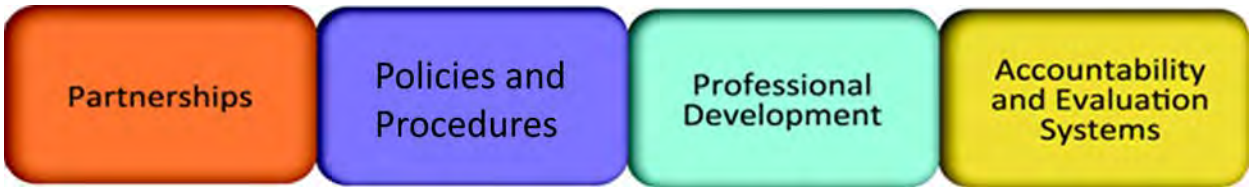
B. **Assembling a Team**- gathering a representative group of all stakeholders who will work together to guide the creation of a Program of Study.

C. **Designing and Building a POS**- After selecting a specific pathway, team members analyze curriculum and determine development and improvement needs. The outcome of this phase is a detailed plan for the implementation of the program of study.

D. **Implementing the Program of Study**- the detailed Program of Study plan is put in place and students enroll in the program and continue on to post-secondary education.

E. **Evaluating and refining the Program of Study**- An evaluation plan is created that defines what data elements are needed, how they will be collected, what the benchmarks for success are, and who is responsible for providing the improvements in the Program of Study. Considerations for refinement of the Program of Study after a strong evaluation.

Laying the Groundwork



Program of Study implementation requires groundwork preparation prior to starting. Think of it as preparing the foundation to be set in the process of building a home. Who does this work will vary by school district and post-secondary institution and may include a variety of individuals from administrators to teachers and from counselors to students and everyone in-between. The critical partnerships created for a particular POS will vary and therefore must be identified for each one that is created.

Relevant components for this phase include the Policies and Procedures and Partnerships. Additionally, it is not too early to begin planning for Professional Development or the Accountability and Evaluation Systems necessary for measuring success. Refer to the component descriptions in *Section III* for more specific information.

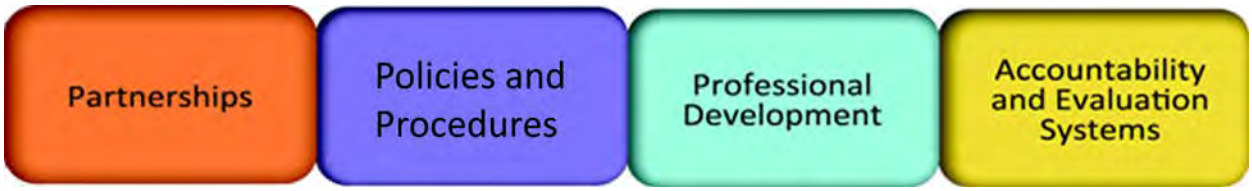
What Does Success Look Like for Laying the Groundwork?

Developmental Level	Needs To Be Considered	In the Planning Stage	Partially Implemented	Fully Implemented
Administrators and policy-makers are familiar with and support the career cluster and pathway initiative.				
Labor market and employer information is reviewed to identify potential Programs of Study.				
An evaluation process is in place for the internal and external review of existing offerings and curriculum at both secondary and post-secondary institutions.				
Needs assessments are conducted to determine training and development needs of local and regional stakeholders.				
Needs assessments of student career interests and necessary technical skills are conducted and analyzed.				

Program of Study Implementation Plan

Implementation Level	Needs To Be Considered	In the Planning Stage	Partially Implemented	Fully Implemented
Potential critical partners are actively identified and solicited.				
Build connections through School-to-Work, Career/Tech Prep, Career and Technical Education or Education for Employment networks.				
Build connections with non-education focused stakeholders like business and industry, chambers of commerce or other community related organizations.				
Educators participate in networking meetings and seminars to stay up-to-date in the Career Pathway field and local economic development needs.				
Needs assessments conducted to determine the focus of POS Professional Development.				
Develop and use network of communications about POS within and across partnerships and organizations.				
Refinement Level	Needs To Be Considered	In the Planning Stage	Partially Implemented	Fully Implemented
Identify possible budget requirements for the first three phases of the POS implementation process.				
Identify potential funding sources for initial and long term Program of Study implementation.				
Identify the existing and potential resources of secondary, post secondary, and community organizations related to potential programs of study.				
Insure that potential Programs of Study are included in the secondary Carl D. Perkins Act applications as soon as possible. Inform Career/Tech Prep coordinators of potential POS as soon as possible				
Partnerships are developed and evaluated to ensure growth and stability for POS.				

Assembling a Team



Program of study design and implementation requires collaboration at every level of the process. Based on your local community, a team should be convened that includes content and CTE teachers, curriculum and CTE coordinators, counselors, business and industry representatives, post-secondary partners, education administrators, labor union representatives, and recent graduates. This team will first examine policies and procedures currently operating in partner organizations to determine if they are in alignment with POS implementation guidelines. This analysis will lead to the creation of relevant policies and procedures the school district or post secondary institution may need to implement or alter. The team has many planning responsibilities. The first is to examine local labor market data and determine the highest employment needs in the local community and region. This data will help determine the specific pathways and curriculum needed for this community. It is essential to look at both secondary and post-secondary connections to make sure that a relevant pathway is created for a seamless student transition. It is also important to look at other sources of information, including asking local employers what skills they are looking for in future employees. Are the connections in place to lead students in this Program of Study to high-skill, high-demand, or high-wage jobs?

Another responsibility of the team is to insure that secondary and post-secondary partners work together on the design, development and implementation of Programs of study. Both secondary and post-secondary educators should view the Career/Tech Prep coordinator at their local technical college as their first point of contact in POS development. Please refer to this guide's appendix for a listing of the Career/Tech Prep coordinators at each of the 16 Wisconsin Technical colleges. Good questions to ask include how many students from the high school are going on to that college, how many are prepared for college-level work, what programs they are completing, what are local articulated/ dual credit courses, and how many transfer on to a 4-year college.

It is possible that a workforce or economic development agency might initiate Program of Study planning. Another great resource is the local or CESA CTE Coordinator, who may know valuable information about local career and technical education programs in their region. They would also make excellent speakers for teacher professional development as well.

This team will continue the work throughout all five phases of this project. The team is integral in planning, implementing, and evaluating the POS and should provide feedback for any necessary changes required. Leadership for this team is critical. It is important to identify team leaders from both the secondary and post-secondary institutions and give them the time and resources they need to be successful.

What Does Success Look Like for Assembling a Team?

Developmental Level	Needs To Be Considered	In the Planning Stage	Partially Implemented	Fully Implemented
A team approach consisting of secondary school counselor(s), core academic teachers, CTE teachers, a curriculum or CTE/STW/E4E coordinator, business and industry representatives, and post-secondary Career/Tech Prep coordinators, content specialists, and deans is utilized.				
Program of Study team members and stakeholders become knowledgeable about career clusters, pathways, and regional POS opportunities.				
Introductory professional development is researched, developed, and provided.				
Team member roles and responsibilities are identified.				
Implementation Level	Needs To Be Considered	In the Planning Stage	Partially Implemented	Fully Implemented
The POS team reviews relevant secondary and post-secondary curriculum related to the POS.				
The POS team needs to collaborate with any existing advisory committees and encourage the integration of resources.				
Professional development opportunities for stakeholders are identified and shared.				
Program of Study team members and stakeholders participate in professional development programs specific to each stage of POS development.				
Data on POS development progress is collected and analyzed for quality, including how well it meets the needs of diverse students. Progress reports are created and shared with all stakeholders.				

Refinement Level	Needs To Be Considered	In the Planning Stage	Partially Implemented	Fully Implemented
There is evidence of regular, productive POS team meetings and collaborative maturity.				
POS choices are evaluated to ensure they correspond with analyzed labor market data and to ensure nondiscrimination and equity in POS opportunities.				
Labor market information and stakeholder input are used to expand, refine, and update the POS in order to maintain or exceed industry standards.				

Designing and Building a POS

Designing and building a Program of Study in a specific Career Pathway goes way beyond filling in a chart with the names of existing coursework. This stage includes reviewing college and career readiness standards, skill attainment certifications, current and prospective articulation agreements, appropriate course sequencing, and accountability and evaluation systems.

The POS team will first review the skills and knowledge required for entry into a specific occupational or college program as well as entry into work. It is critical that post-secondary educators and business stakeholders are included to clarify the knowledge and skill proficiencies a student needs to have mastered by the completion of a program of study. Next, the POS team will first review the knowledge and skill statements of each Career Pathway to assess the sequence from secondary to post-secondary of existing or potential courses. Coursework mapping is the tool designed to assess what is currently offered and compare it to curriculum aligned to college and career readiness standards to truly prepare students for a successful career and future learning. Sample or initial knowledge and skill statements can be found on http://www.careertech.org/ . An example of the knowledge and skill cluster statement from the careerclusters.org website follows. There are cluster-level and pathway-level knowledge and skills competencies that should be used to crosswalk current offerings. These statements can also be vetted with local industry groups.

Health Science Career Cluster
Cluster Knowledge and Skill Statements

The following Cluster (Foundation) Knowledge and Skill Chart provides statements that apply to all careers in the Health Science Cluster. Persons preparing for careers in the Health Science Cluster should be able to demonstrate these skills in addition to those found on the Essential Knowledge and Skills Chart. The Pathway Knowledge and Skill Charts are available in separate documents.

Cluster Topic HLC01	**ACADEMIC FOUNDATIONS:** ***Achieve additional academic knowledge and skills required to pursue the full range of career and postsecondary education opportunities within a career cluster.***
HLC01.01	**Health care workers will know the academic subject matter required for proficiency within their area. They will use this knowledge as needed in their role. In addition to state high school graduation requirements, the following are included:**
HLC01.01.01	Use a knowledge of human structure and function to conduct health care role.

The POS team will work with the knowledge and skill statements for the purpose of both vertical and horizontal curriculum alignment. Horizontal alignment refers to teaching certain knowledge and skills at the same grade levels that are relevant in related subject areas. This includes content from academic and CTE coursework. Vertical alignment builds upon pre-existing knowledge from one grade level to the next, transitioning from high school to post secondary courses. This alignment will include determining where each specific knowledge and skill will be incorporated in the individual course sequence. The team next aligns the specific knowledge and skills with existing courses or develops and designs new courses and begins sequencing the courses.

In addition to the mapping of knowledge and skill statements and the sequencing of existing and new courses, the POS team will also look for opportunities for articulation agreements that add value to a high school diploma and provide seamless student transition to the post-secondary post secondary portion of their program of study. Articulation agreements will be revised, improved, or newly developed as called for in the program of study. Another related task of the POS team is to incorporate certifications or related credentials for technical skill attainment throughout the Program of Study, with input from their business partners.

Additional national standards to consult include relevant academic and Career and Technical Education content standards, industry developed standards, teacher association standards, and 21st century skill standards. Additional information can be obtained through specific occupational DACUMS conducted at the post-secondary level. The DACUM process starts with industry descriptions of knowledge and skills that an employee needs to be successful in a specific occupational area.

The POS team can use the tool to build a program of study sequence of courses on the Wisconsin Career Pathways website. This website also provides a great resource for POS teams to look at similar programs of study developed around the state. In order to Build POS charts utilizing the website, educators will need a login, obtainable through the Career/Tech Prep coordinator. Anyone can visit the website and utilize its multiple resources without a password. For more information on the website, please see the appendix.

Lastly, the POS team will design the accountability and evaluation plan to collect data for evaluating the POS. Data is essential to determine success of the POS. Data must be disaggregated and analyzed to provide information on how and to what proficiency level diverse groups of students are achieving the required competencies. Such data

contains clues as to what parts of the POS needs to be strengthened. Data from secondary, post-secondary and employer stakeholders needs to be included in the overall evaluation and accountability plan.

What Does Success Look Like at this Step?

Developmental Level	Needs To Be Considered	In the Planning Stage	Partially Implemented	Fully Implemented
Knowledge and Skill Statements have been analyzed, verified, and/or modified if needed and mapped to existing or future courses.				
Secondary and post-secondary curricula are aligned to state and national standards with industry and community objectives in mind in order to develop an appropriate sequence of courses.				
Required academic, technical, and employability skills are mapped throughout the POS curriculum.				
Data is analyzed according to demographic groups of students participating in the POS to determine the size, scope, and possible supports or interventions needed to close any gaps.				
A 3-5 year plan is used to guide decisions regarding course offerings and POS development, implementation, and refinement.				
Implementation Level	Needs To Be Considered	In the Planning Stage	Partially Implemented	Fully Implemented
Stakeholders verify that the planned courses in the POS represent a coherent and rigorous sequence.				
Both secondary and post-secondary courses are included on a plan of study.				
The district processes for curriculum development are being followed at both secondary and post-secondary levels.				
Curriculum is written with content objectives, state/national standards, assessments, learning strategies, and evaluation strategies.				
The POS design requires innovative teaching and learning methods that integrate the use of technology, inquiry, challenge, and problem-based approaches, higher-order thinking skills, and competency-based learning.				

Implementation Level	Needs To Be Considered	In the Planning Stage	Partially Implemented	Fully Implemented
Articulation agreements are developed or enhanced to provide for transcripted credit and advanced standing with post-secondary partners.				
Evaluation systems are designed to ensure that courses represent a sequence of instruction that leads to a degree, certificate, or credential.				
Evaluation systems are designed to insure that course and POS outcomes are equitable based on sex, race, disability, English Language Learner status, economic status and other special populations as defined by the Perkins law.				
The POS is built and located online at the Wisconsin Career Pathways website or is available to all stakeholders. (Optional)				
A 3-5 year implementation plan has been developed and contains goals, timelines, and tasks to be performed related to the *Ten Components* of the career pathway.				
Refinement Level	Needs To Be Considered	In the Planning Stage	Partially Implemented	Fully Implemented
POS curriculum is aligned with the current Wisconsin Model Academic Standards for Comprehensive School Counseling and all content areas.				
Students and parents have an opportunity for input into the development of the POS.				
Current Wisconsin Statewide exams and other student assessment data are analyzed and used to make curriculum improvements for all students and for sub-groups of students.				
Articulation agreements are developed and updated on an annual basis and are shared with stakeholders.				
The POS team works with industry to identify the value added certifications required for occupations.				
Schools, the community and employers provide relevant work-based learning opportunities for each and every student.				

Professional development opportunities are provided to support educator's use of innovative teaching and learning methods.				

Implementing the POS

Once a Program of Study is designed by the team and verified by all stakeholders, the next step is implementing or engaging students in the Program of Study. At this point, the components of School Counseling and Academic Advising, Teaching and Learning, and continued Professional Development components are the focus in this phase. The work of the other components may appear at any time in the implementation phase, but the three components are critical to link developed programs of study to the students who will utilize them.

From a student's point of view, the POS is a key component of an Individual Learning Plan (ILP). An ILP is part of the Wisconsin Model for Comprehensive School Counseling, which recommends that each student create an ILP before leaving middle school and review and update it yearly throughout high school. An ILP is a fluid, living, breathing, mapped educational plan reflecting a student's unique set of interests, needs, learning goals, and graduation requirements. It goes beyond the "four-year plan" used for many years in high schools by documenting the student's connections to the larger community including examples of community service and volunteerism; membership in civic or community organizations; participation in leadership activities outside of school; involvement in job shadowing, mentorships, and/or apprenticeships; and the pursuit of skill development through hobbies, athletics, and fine arts. See the School Counseling and Academic Advising component in Section three of this manual for more information on this. The Wisconsin Department of Public Instruction has created a power point that outlines requirements of a sample ILP and is available at http://sspw.dpi.wi.gov/sspw_counsl1.

Teaching and Learning reform and research has provided recommendations for the kind of instructional methods and practices as well as the organization of content that leads to higher student achievement. Research suggests that the teacher and their instructional skills is the single most important factor in student achievement. Because of this research, Wisconsin adopted administrator, teacher, and pupil services educator standards found at the following link: https://dpi.wi.gov/tepdl/programs/standards. Information about requirements for ongoing teacher learning and development can also be found at https://dpi.wi.gov/tepdl/pdp.The following links will show numerous instructional strategies that any teacher may find useful to incorporate into their classrooms.

Professional development is also critical to the success of the educator.
http://www.mcrel.org/PDF/Instruction/5992TG_What_Works.pdf

http://www.marzanoresearch.com/site/# (Click on Professional Development)

http://www.alliance.brown.edu/tdl/tl-strategies/crt-principles.shtml

What Does Success Look Like at this Step?

Developmental Level	Needs To Be Considered	In the Planning Stage	Partially Implemented	Fully Implemented
Classroom curriculum, instruction, and assessments are aligned with each other and meet the goals designed by the POS team.				
Teachers know about and actively participate in professional development to incorporate innovative teaching and learning strategies.				
School counselors are familiar with the POS framework and can locate and utilize information on each of the 16 Career Clusters and 79 Career Pathways.				
Counselors and teachers provide students with career awareness, career interest assessments, traditional and nontraditional career exploration opportunities and facilitate student career development growth.				
The school district will work with local employers and community members to insure that students have opportunities to participate in work-based learning.				
Course description booklets include information on Career Clusters, Career pathways, and Programs of Study and identify how courses and course sequencing are related.				
Implementation Level	Needs To Be Considered	In the Planning Stage	Partially Implemented	Fully Implemented
School counselors are familiar with, support, and promote the school's Programs of Study and actively contribute to the work of the POS team.				
School counselors have participated in the Wisconsin Comprehensive School Counseling Model (WCSCM) Level I, II, and III Trainings or similar program supporting contemporary school counseling.				
Teachers evaluate course and POS data and use the information to improve student achievement or the operation of the POS.				
Teachers demonstrate a commitment to their ongoing learning through highly effective professional development.				

Implementation Level	Needs To Be Considered	In the Planning Stage	Partially Implemented	Fully Implemented
Teachers encourage student feedback to provide input to their education and help make necessary improvements.				
Teachers are familiar with common core content and proficiency standards as well as ever changing technical content related to the Program of Study.				
School counselors have educated other teachers and staff about the purpose and practice of comprehensive school counseling.				
Teachers integrate the development of the student's ILP into classes and activities.				
Students are engaged in the learning process and show evidence of growth throughout their POS. Continuous annual review of the ILP will demonstrate results. Diverse groups of students have substantially equal outcomes from the courses and activities in a POS.				
Students and parents are informed about labor market information, high demand/high wage careers, and multiple educational pathways to prepare for those careers.				
Students are exposed to a variety of field trips, guest presenters, and mentors related to careers. Presenters represent the gender, ethnic, cultural, disability, and other diversity of the community.				
Students are developing and redeveloping post-secondary and career plans using the ILP, including their individual program of study.				
A comprehensive model of PK-12 career development is available to all students in the district.				
Employability Skills Certificates and other skill certificates (DPI, DWD, or industry-based) are earned by students. Copies of the certificates earned are retained as evidence of success of the POS.				

Program of Study Implementation Plan

Refinement Level	Needs To Be Considered	In the Planning Stage	Partially Implemented	Fully Implemented
Interest, skill, and aptitude inventories and assessments are available to students. Care is taken to overcome stereotypes and myths about career appropriateness based on gender, ethnicity, disability, or other diversity factors.				
Teachers and community members help students expand their interest, understanding, and awareness about careers.				
Students can identify at least one career cluster or related pathways they are interested in pursuing. They can also show the connection of those pathways to their current learning.				
Students utilize the POS documents to develop their ILP beginning in middle school but no later than 8th grade.				
Students use the ILP to guide course selection decisions each year.				
Students demonstrate growth toward and mastery of Program of study knowledge and skills.				
Achievement gaps based on sex, ethnicity, disability, or other diversity factors are analyzed and steps are taken to close those gaps.				
Student employability and 21st century skills are assessed at various levels so improvement in skills can be documented.				
The Comprehensive School Counseling Model articulates how the district meets the Education for Employment Plan requirement to provide every student with the equivalent of a semester long course in career development.				
Students use the internet, e-portfolios, and/or career development software/materials in classroom lessons and advisement sessions to fulfill the goals of their ILP and POS.				
Refinement Level	Needs To Be Considered	In the Planning Stage	Partially Implemented	Fully Implemented
Students participate in documented work experiences, youth apprenticeship, job shadowing, and volunteer experiences related to their Program of Study.				

Students participate in “Career Pathways Days,” “Career Fairs,” “Career Expos,” WI Education Fair, Reality Fair/Store, Mini-Business World, and student participation is documented.				
Students participate in career fairs, career days, and other events hosted by universities, technical colleges, and other partners.				
Parents/students are participating in educational/career planning conferences with the school counselor as defined by the WCSCM. Conferences assist in identifying the student’s career goals, planning for course selection, reviewing academic performance, and updating the student’s ILP.				
Students and parents are provided career development resources and strategies.				
Secondary and post-secondary educators review the data on non-traditional course or program participation and completion				
Review the number of student earned certifications is evaluated to determine improvements or enhancements for the refinement of the POS.				
Students continue their ILP as they transition from secondary to post-secondary education options.				
Counselors have written career development curriculum that is aligned to the WCSCM and that support POS implementation.				
Diverse and representative guest speakers are invited to present to students on work readiness skills and/or specific occupations.				
Secondary schools prepare students for post-secondary education without the need for academic remediation in each POS.				
Students are prepared to enter into the workforce, prepared with 21st century and technical skills key to successful employment.				

Evaluating the POS

The last phase in implementation is developing and implementing a detailed plan for evaluation and accountability. Through each of the phases, the POS team has made design decisions and draft data collection plans that will require both formative and summative evaluation.

Formative is an assessment of efforts prior to their completion for the purpose of improving efforts. The aim of this evaluation is prospective—to improve, to understand strengths, in order to replicate them or to isolate weaknesses in order to redesign them. Formative evaluations are done after specific events or points in time to get data about what happened. Answers to questions like what were the results, and what impact on the Program of Study or participants can then be documented for future analysis.

There are four main goals for formative evaluation:

- Planning-clarifies and assesses POS plans
- Implementation-focuses on the extent to which a program is proceeding according to plan.
- Progress-assesses a POS programs progress from design to full implementation usually involves benchmarks that are assessed along the way.
- Monitoring-is often conducted by an outside (impartial) evaluator for the purpose of overall POS evaluation.

Summative Evaluation assesses program outcomes or impacts. Summative evaluation is retrospective-to assess concrete achievement. A summative evaluation could occur quarterly, twice a year, or at the end of the implementation phase.

At this point, the team refines and finalizes an evaluation and accountability plan. Such a plan defines:

- the data elements to be collected,
- a timeline for each evaluation activity
- the individuals responsible for collecting/ analyzing the data, and
- checkpoints where the POS team will review and reflect on the data.

Evaluation and accountability results will be shared with partners. The partners and the POS Team will decide based on the data what changes or improvements are needed in the design and implementation of the POS. Finally, professional development opportunities based on the data will be provided to all stakeholders so that planned refinements can be supported.

What Does Success Look Like at this Step?

Developmental Level	Needs To Be Considered	In the Planning Stage	Partially Implemented	Fully Implemented
POS formative and summative evaluation plan is developed and refined on a regular basis and will include short and long term local school, district, department, and individual performance goals and priorities.				
The accountability/assessment plan addresses the core indicators of Perkins IV legislation.				
Data collection systems are established or coordinated to provide data needed for formative and summative evaluations.				
All data is analyzed in both the aggregate and disaggregate.				
Using the evaluation charts in this manual, accountability takes place to evaluate the POS and measures are identified with a plan to benchmark and report the outcomes from the data. Any performance or achievement gaps based on diverse characteristics are identified and addressed to eliminate the gaps.				
Implementation Level	Needs To Be Considered	In the Planning Stage	Partially Implemented	Fully Implemented
Disaggregated data on participants in high school enrollment, dual/transcripted credit, youth options, and post-secondary programs is collected and analyzed.				
Data on utilization of articulation agreements, including and the number and type of participants of secondary and/or post-secondary articulation agreements is collected, reported and analyzed.				
Follow-up data is collected on diverse Career Pathway completers and high school graduates (i.e., post-secondary education institution application(s), post-secondary education major declared, post-secondary institution enrollment, etc.).				
POS implementation team members are engaged in continuous formative and summative evaluation on the program of study.				

Program of Study Implementation Plan

Implementation Level	Needs To Be Considered	In the Planning Stage	Partially Implemented	Fully Implemented
Professional development is based on the findings of the evaluations and includes measurable improvements for one or more of the following: • new instructional methods/strategies, • differentiated instruction, • introduced a new course, • implemented a new course, • major revamping of units, and/or • new assessments/ rubrics added to units, student achievement and success, etc.				
The school, district, and POS team keep track of enrollment and course grades, course passage rates, and WKCE, Explore, Plan, ACT/SAT scores, post-secondary placement assessments, etc., by student demographic (economic status, gender, ethnicity, disability, ELL, special population status, etc.) and program categories. (AP students, Career Pathways completers, CTE concentrators, etc.) over time.				
Data on participants of co-curricular and experiential learning opportunities (i.e., School-to-Work participants, students completing an internship or co-op experience, CTSOs, etc.) is collected and analyzed, including by demographic status.				
Action steps are identified to address the goals and priorities and progress toward completion of the action steps is monitored by the accountability/evaluation team as well as the career pathways team.				
Develop specific student competencies for each program of study and utilize them.				

Refinement Level	Needs To Be Considered	In the Planning Stage	Partially Implemented	Fully Implemented
Evaluation instruments and data collection systems are functioning to track POS measurable outcomes in all of the following: • new instructional methods/strategies, • differentiated instruction, • introduced a new course, • implemented a new course, • major revamping of units, and/or new assessments/ rubrics added to units, student achievement and success, etc.				
The POS implementation team is actively reviewing and updating the POS on a regular basis as a result of the evaluations.				
The school, district, and POS team keep track of both secondary and post-secondary graduation rates over time to determine effectiveness of the POS delivery.				
Enrollment, course grades, course pass rates, exam pass rates, graduation rates, etc., are reported and analyzed.				
Data on who earns state and/or national certification exams is collected and analyzed, including by demographic status.				
Feedback on data is solicited from stakeholder groups and documented.				
POS, CTE programs, and curriculum are updated and revised based on data-driven observations, including different performance or success based on demographics, recommendations, and decisions from various stakeholder groups.				
Revisions are made to the POS documents as courses are added or deleted from the middle school/high school/ technical college offerings.				
The POS team analyzes the POS budget to determine current and future expenditures as well as cost effectiveness.				
Increased student achievement is documented based on the data from one or more of the following: number of articulation agreements, student participation in CTSOs, participation in leadership activities, skills certificates				

completed, and participation in work-based learning options.				

Refinement Level	Needs To Be Considered	In the Planning Stage	Partially Implemented	Fully Implemented
An evaluation of the team approach is conducted on a continuous basis. The team consisting of school counselor(s), core academic teachers, CTE teachers, a curriculum coordinator, CTE Coordinator, business and industry representatives, post-secondary partners, and legislators actively manages and updates the POS. The team represents the diversity of the community or region and includes one or more individuals with knowledge of the needs of special populations.				
The POS team evaluates the participation in and the effectiveness of student's use of individual learning plans.				

SECTION III - A Deeper Look at the Ten Components

Section III is a detailed part of the guide, which articulates each of the ten components of Program of Study Implementation. Each component is thoroughly investigated and step-by-step analysis of the POS Implementation process is included.

Those not familiar with the POS implementation process may utilize this portion of the guide much more closely than those immersed in the process. For others, it may provide a refresher to make sure that each component is thoroghly implemented at each step in the process.

College & Career Readiness Standards

Content standards that define what students are expected to know and be able to do to enter and advance in college and/or their careers are at the core of Program of Study development and implementation. These standards—contributed dually through **local/regional** discussion with education and business partners as well as through key **national** initiatives, such as the Common Core State Standards, provide a consistent, clear understanding of what students are expected to learn, so teachers and parents know what they need to do to help them.

Essential Elements

- ***Develop and continually validate College and Career Readiness Standards in collaboration with post-secondary and industry partners, as well as with secondary colleagues.***

Utilizing a well-developed partnership, educators should align and collaborate on defining and validating standards required of students upon the multiple exit points on a career pathway. When students transition to a post-secondary institution, clear standards or expectations of the skills the student will have for success should be clearly spelled out. In Wisconsin and nationally, post-secondary institutions have many similarities in the general readiness expectations for incoming students, especially in key academic areas of math, language arts, and science. And as skills sets frequently change within occupations, a plan to continually revisit the standards should be in place.

When designing programs of study, understanding the technical and academic coursework transition between grades 12 and 13 requires conversations between secondary and post-secondary teachers and staff to discuss the "threshold" at which college programs begin, to identify common content gaps/overlap, and to clearly understand performance expectations at the beginning of the 13th grade level of the Program of Study. These conversations among high school and college staff may be a relatively new development for some institutions, but they are critical to creating programs of study that are efficient and effective in helping students make progress toward their goals.

- ***The focus of discussions among secondary, post-secondary, and industry partners should be to create coherent, non-duplicative sequences of coursework through which students make progress without repetition or remediation***. Many programs of study will allow students to earn college credit while still in high school, but all programs of study should be designed to try to **eliminate the remedial coursework** that students have to take in college. "National data from the U.S. Department of Education on participation in remedial education found that 34% of all new entering college students required at least one remedial education class. Of those students who enrolled in a community college, 43% required some remedial education, 40% of high school graduates need remedial coursework when they get to college." (Vandal, 2010) Effective Career Pathway development can help Wisconsin students avoid remediation and continue progress in their chosen career field.

- ***Incorporate essential knowledge and skills and provide the same rigorous knowledge of such skills (i.e., academic skills, communication, and problem solving) which students must master regardless of their chosen career area or POS.***

  The most recent and most widely-supported work on knowledge and skills that are essential for American students is the Common Core State Standards initiative (http://www.achieve.org/achievingcommoncore). At the heart of the Common Core State Standards initiative lays a quest for every student to achieve a baseline of essential knowledge and skills. Educators should incorporate this baseline as a starting point for discussions on the curriculum design for the Pathway.

  The Common Core State Standards initiative is based on the reality that across the nation there is an "expectations gap," a disconnect between what students need to know to earn a high school diploma and what they need to know to be successful in college and careers. The recently-developed Common Core State Standards aim to help close this gap, as they are anchored in college- and career-ready expectations and were designed to ensure all students progress to the college and career-ready level by the end of high school. These college- and career-ready content standards, with their notion of a "line" or "threshold" that all students need to get to in order to be ready for college and careers, have been based on evidence from a number of sources, including international benchmarking, surveys of post-secondary faculty and employers, review of state standards, and expert opinion.

  But the standards alone are not enough; local districts need policies in place to ensure that students have actually met the expectations in the standards. For instance, extensive national research suggests that for high school graduates to be prepared for success in post-secondary settings and in the 21st century workforce, they need to take four years of challenging mathematics—including content at least through Algebra II or its equivalent—and four years of rigorous English aligned with college- and career-ready standards.

  As these standards are implemented in Wisconsin in coming years, POS teams need to be aware of how the Common Core standards should influence the content expectations of their programs of study. For example, it should be common for students enrolling in Programs of Study to be encouraged to select from a range of high quality mathematics options. For instance, a student interested in starting a business after high school could be in a POS that includes a course on mathematical decision-making. STEM-intending students should be in programs of study which strongly encourage them to take Pre-calculus and Calculus and perhaps a computer science course.

  The intertwined work of implementing Programs of Study along with the Common Core State Standards provides school districts with the opportunity to re-evaluate their high school graduation requirements—and course content—to ensure that **all** students are expected to take courses that will prepare them for college, careers, and life.

- ***Incorporate industry-recognized technical standards that are valued in the workplace.*** In addition to core academic skill mastery based on standards, each given Pathway should provide opportunities for students to gain technical mastery. The technical mastery is defined with the assistance of the Career Pathway team including input from business and industry. As skills evolve due to changing industry expectations, the team should incorporate continued input into the technical skill standards to ensure students leave their respected institutions with the skills to succeed.

A Deeper Look at the Ten Components

College and Career Readiness Standards	Needs To Be Considered	In the Planning Stage	Partially Implemented	Fully Implemented
Develop and continually validate College and Career Readiness Standards in collaboration with post-secondary and industry partners, as well as with secondary colleagues.				
Incorporate essential knowledge and skills and provide the same rigorous knowledge of such skills (i.e., academic skills, communication, and problem solving) which students must master regardless of their chosen career area or POS.				
Focus on lowering common remediation needs of entering college students.				
Incorporate industry-recognized technical standards that are valued in the workplace.				

Partnerships

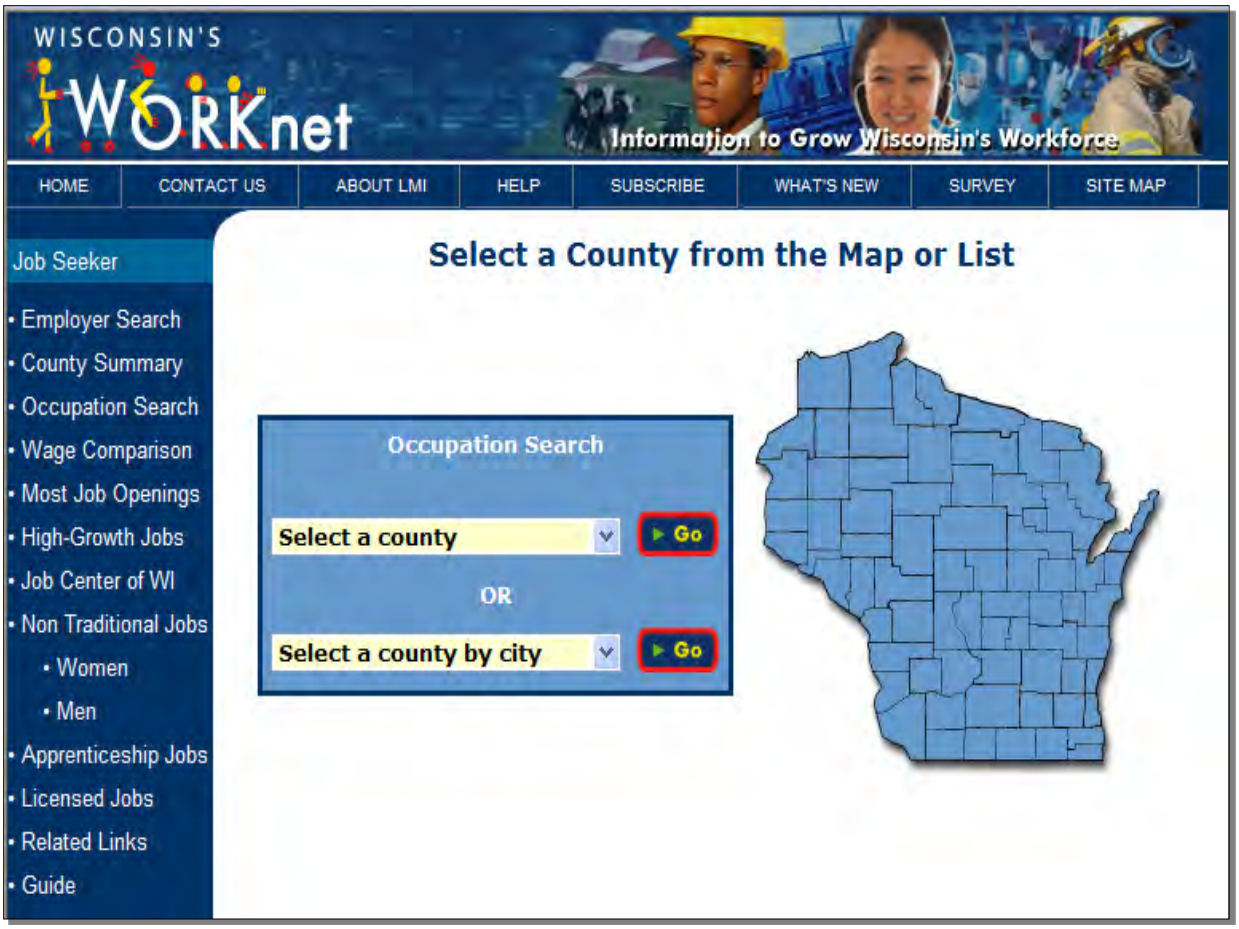
Cultivating partnerships is fundamental to successful career clusters and pathways framework in Wisconsin schools districts and post-secondary institutions. There are two types of partnerships that are essential: *internal* and *external*. Partnerships should include relationships within the school and/or district and/or post-secondary institution in the form of curriculum integration. Relationships with constituents from business and industry and other civic entities or professional organizations within the community should be included. Identify representatives from internal and external sources to formulate a career pathway team that will manage and administer Career Cluster and Pathway framework development and implementation.

Steps

- ***Plan and elaborate on the goals, mission, or statement of purpose of partnerships.***
  Successful career pathway team partnerships begin with clear documentation. The school/district/post-secondary institution should determine broad goals and intended outcomes of partner relationships and put them in writing to serve as the partnership's mission/purpose. Next, create written documentation that describes the roles and responsibilities of each individual/organization involved in a specific partnership. Without this documentation, roles, responsibilities, and expectations are unclear.

- ***Conduct ongoing analysis of economic and workforce trends.***
  Education professionals cannot make effective decisions about local, regional, or statewide Career Pathways to be created, expanded, or discontinued without being fully informed about current and future economic and workforce trends. It is up to education professionals to be knowledgeable about jobs within the economy that the selected career pathway serves. Secondary teachers and school counselors along with post-secondary faculty and academic advisors must inform students and parents about those current and future trends. This includes teaching students and parents how to find and interpret job information and trends as part of an assignment, or through a student-parent career planning session.

  The Wisconomy website (https://jobcenterofwisconsin.com/wisconomy/) offers pertinent job information in Wisconsin and is a good place to gather job projection data. This site contains a variety of labor market information including high-growth jobs, jobs with the most openings, and the ability to search in a regional format. Most jobs data is presented in the form of current statistics as well as short- and long-term projections based on job titles or standard industry codes. Remember that the Career Cluster and Pathway framework which focus on careers may actually prepare students for several jobs within a cluster and/or Pathway.



- ***Link to existing local, regional and/or state initiatives that promote workforce and economic development.***
  Education professionals should work with other education, business and industry, workforce and economic development partners to identify existing and ongoing industry sector planning strategies and activities. Connect with local and/or regional workforce and economic development boards. Become involved in chamber of commerce and other civic organization activities to find out what is going on in the community/region and consider how education can get involved to further enhance existing initiatives.

- ***Identify, validate, and continue to update the employability, technical, and work-readiness skills that should be attained within a Career Pathway.***
  The career cluster and pathway team should conduct research about current and future economic and workforce trends and they should identify existing local/regional initiatives and examine existing articulation agreements. Articulation agreements from high school to technical colleges and universities are listed on technical college and university websites (WTCS articulations http://systemattic.wtcsystem.edu/reports/STW/articulation_agreements.htm). Course-by-course articulation agreements among post-secondary institutions can be found on the University of Wisconsin (UW) System Transfer Information System web site. For further information please visit the following

websites http://www.witechcolleges.org/transfer/agreements_by_college.php and https://www.wisconsin.edu/transfer/ .

Once the career cluster and pathway team has identified a Career Pathway, the school/district should establish an advisory council or board **or** partner with an existing technical college advisory board. Advisory committee membership should consist of secondary and post-secondary education partners as well as business and industry representatives who are vital to the local community and/or region.

Partnerships	Needs To Be Considered	In the Planning Stage	Partially Implemented	Fully Implemented
Plan and elaborate on the goals, mission, or statement of purpose of partnerships				
Conduct ongoing analysis of economic and workforce trends.				
Link into existing local, regional, and/or state initiatives that promote workforce and economic development.				
Identify, validate, and continue to update the employability, technical- and work-readiness skills that should be attained within a Career Pathway.				

Professional Development

Professional development in a successful Career Clusters and Pathways program contains opportunities for administrators, teachers, school counselors, and other education professionals and stakeholders to implement and evaluate career cluster and pathways. . Professional development is necessary at every level of implementation and should be provided to help teachers and other partners learn more about programs of study.

Steps

- ***Support the alignment of curriculum using national, state, and industry standards.***
  Professional development opportunities must allow for a team approach to Career Cluster and Pathway research, development, implementation, and revision. The Career Cluster and Pathway team should consist of school counselor(s), core academic teachers, Career and Technical (CTE) teachers, district CTE coordinators, a curriculum coordinator, business and industry representatives, post-secondary partners, (including academic and occupational instructors/faculty and academic advisors) and legislators.

  Successful Career Cluster and Pathway teams need concentrated time together to evaluate the knowledge and skill statements within a Career Pathway and to align curriculum around the standards model. Then, the team plans the curriculum from grades 9 -16.It is critical for secondary and post-secondary partners to work together on the curriculum planning. More often than not, secondary partners are not fully aware of what post-secondary partners or business and industry is doing. Likewise, post-secondary partners may not be completely informed about the curriculum that students take prior to pursuing post-secondary education. Business/industry representatives in the community and/or region may not always have a good handle on everything that education professionals are doing. Therefore, one of the first activities a career cluster and pathway team should engage in is the examination and alignment of the knowledge and skills statements to determine if the existing curriculum has consistent

Career Cluster and Pathway
Professional Development Agenda

- Welcome and Introductions
- Overview of Career Clusters and Pathways
- Review of Labor Market Data and Selection of a Pathway
- Review of Knowledge and Skill Statements
- Analysis of Existing Curriculum
- Identification of Gaps in Curriculum
- Development of Plan to Address Gaps
- Adjourn

standards; course syllabi and objectives; and program competencies or outcomes. Here is a sample agenda for a local professional development day.

Another resource for education professionals is this piece on incorporating knowledge and skills. https://dpi.wi.gov/sites/default/files/imce/cte/pdf/curriccrosswalk.pdf

- ***Support the development of integrated academic and career and technical curriculum and instruction.***

Promising Practices:

CTE and Academic teachers developed a Science of Transportation course at FVTC; this course is a hands-on contextual course which teaches students physics and chemistry in their occupation.

When the Career Cluster and Pathway team convenes to examine and review knowledge, skills, standards, and curriculum, the team must also work to integrate academic and career and technical coursework. This provides the whole picture of where in the curriculum the knowledge and skills required of the Pathway is being obtained or taught. This process is considered a horizontal curriculum alignment and is critical because many education professionals teach courses in isolation, without knowing what their colleagues teach or how course content fits into the entire curriculum or relates to content from other courses. Research indicates concepts and information are best taught in context which challenges **all** education professionals to seek ways to integrate course content and partner in instruction in order to help students see connections in what they are learning (see Teaching and Learning).

- ***Ensure that teachers and faculty have the content knowledge to align and integrate curriculum and instruction.***

The academic and career and technical integration just described does not happen automatically. Because many education professionals have performed curriculum development and instructional responsibilities in isolation for so long and people tend to revert back to that which is comfortable and familiar, they are often uninformed about what is going on outside their classroom walls. **Now** is the time to provide teachers with professional development opportunities to update knowledge and skills within specific content areas. Without these opportunities, curriculum updates and changes to instructional delivery does not happen. Further revisions may not be based on research, evidence, and current practice which would be a severe disservice to students and other stakeholders being served.

Examples of professional development opportunities:

- National conferences such as the Career Cluster Institute or the National Career Pathways Network conference
- Technical College-Career/Tech Prep Workshops
- State Conferences
- Industry Conferences
- School staff meetings

Promising Practices

Send a team of education professionals to a state or national conference including CTE and academic teachers, counselors, and administrators.

- ***Provide multiple resources for professional development, locally, regionally, statewide and/or nationally.***

Local school/district and post-secondary administrators should assist teacher professional development by making resources available and helping to locate growth opportunities. In addition to local and regional opportunities, professional development experiences outside the district and/or region should be encouraged to broaden perspectives and expand ideas beyond that which is already familiar. If funding for professional development is limited in school districts and post-secondary institutions, seek external grant funding sources.

- ***Offer professional development credit or graduate credit as an incentive for training.***

Local school districts and post-secondary administrators should work with post-secondary partners to offer professional development or university credit as an added incentive for teachers to participate in training. If credit is not offered, teachers can seek out post-secondary institutions that may be willing to offer graduate or undergraduate independent study credit for the experience.

Education professionals can update their knowledge and skills in their content areas by participating in professional development activities such as:

- Work experience or externships
- State and national workshops, conferences, or seminars
- State or district task forces, review teams, or program reviews
- Professional service as a chairperson or member of professional or community service organization board
- Graduate, undergraduate, or continuing education courses
- Industry or occupational certification/licensing
- Business and industry site visits
- Post-secondary classroom observations
- Community service
- National or international study tours

Professional Development	Needs To Be Considered	In the Planning Stage	Partially Implemented	Fully Implemented
Validate the alignment of curriculum using national, state, and industry standards.				
Validate the development of integrated academic and career and technical curriculum and instruction.				
Ensure that teachers and faculty have the content knowledge to align and integrate curriculum and instruction.				
Provide multiple resources for professional development, locally, regionally, statewide and/or nationally.				
Offer professional development credit or graduate credit as an incentive for training.				

Teaching and Learning

Students come to any classroom environment with both preconceptions and misconceptions. It is important for every educational professional to learn about these conceptions and use them to help students successfully learn. To do this successfully, educators must draw from current research on student learning and apply that to the classroom; use research and apply it to instructional practices and designs; and finally, use research to help all students achieve fullest potential. (NRC, 1999) With these key ideas in mind, effective learning takes place when:

- The transfer of learning takes place and skills and knowledge are extended beyond the original learning context,
- Learners must know when, where, and how to use the learned concepts,
- Learning must be guided by general principles or big ideas,
- Learners must understand how individuals learn, and
- Learners need conceptual knowledge in order to successfully make independent learning attempts.

Course and career pathway content should be delivered in a manner that requires students to be engaged with the content, requires students to be engaged with each other, and requires students to be engaged with the teacher. Engaging learners means that "all student activities involve active cognitive processes such as creating, problem-solving, reasoning, decision-making, and evaluation. In addition, students are intrinsically motivated to learn due to the meaningful nature of the learning environment and activities." (Kearsley & Shneiderman, 1999)

Not only is instructional delivery important, but the school district or post-secondary institution should have an established process to review, evaluate and revise course content and examine and update course sequencing. Without such an internal system for curricular checks and balances, your school district or post-secondary institution curriculum may be out-of-date and misaligned with business and industry needs.

Steps

➢ ***Focus on rigor and relevance for diverse students.***
Teachers should aspire to establish a classroom environment that teaches students with high rigor and high relevance. Doing so causes education professionals to strive for excellence in the areas of curriculum, instruction, and assessment. An academically rigorous curriculum should be coherent across grade levels; meet state and district and post-secondary institution graduation requirements; teach analytical thinking, learning, comprehension, and writing skills; and integrate the knowledge and skills needed for students to pursue post-secondary options and be prepared for the workplace.

➢ ***Vary instructional strategies and employ contextualized work-based, project-based, and problem-based learning approaches along with multiple assessments.***
It is important to deliver course content in a variety of different ways to insure that diverse student learning styles are addressed. In a joint study, six organizations representing over 250,000 content teachers, administrators and others came together to unite behind six principles for learning. They determined that educators must know the

core concepts of their discipline if they are to help students grasp new ideas, solve problems, collaborate, and use their imaginations to pursue challenging questions. These groups determined that

- Being literate is at the heart of learning in every subject area.
- Learning is a social act
- Learning about learning establishes a habit of inquiry important in life-long learning.
- Assessing progress is part of learning
- Learning includes turning information into knowledge using multiple media
- Learning occurs in a global context.

It is easy to see how this could easily be a true fit for teachers to tie this into POS implementation as well. For more information about this study, please see http://www.principlesforlearning.org/

In addition, research on good teaching and learning verifies that traditional lecture delivery alone does not help students learn at a deep level or retain information/concepts for very long. Teachers must vary delivery of the course content to actively engage learners in newer forms of delivery such as project-based, problem-based, and challenge-based learning. Students learn more and will retain what is learned when teachers require them to apply, analyze, evaluate, and create through instructional delivery techniques that utilize student demonstration, student discussion, student practice, and students teaching others. Education professionals need to listen to students about what inspires them and how to best learn and adapt instruction and customize assignments to meet a variety of needs.

When a variety of instructional delivery techniques are used in teaching, teachers also need to assess student learning differently. Traditional texts and quizzes that are comprised of true-false, multiple-choice, and matching questions are often used to assess learning from lecture or reading. However, when teachers create a student-centered classroom focusing on active learning, a variety of formative and summative evaluation tools that align with that style of delivery must be used. Teachers should evaluate both the learning ***process*** as well as learning outcomes .Teachers should evaluate mastery of academic as well as technical and employability skills at various points in time.

- ***Immerse diverse students in school and community partnerships.***

Responsibility for student learning cannot rest solely on the classroom teacher. Instead, a variety of individuals must assume shared responsibility for developing and growing students into well-rounded, productive members of society who will be able to live and contribute to the local, regional, and state economy. Therefore, a team approach to developing, creating, and implementing a Career Pathway must be used. For more information, see the chapter on Partnership in Section 3 of this document. Parents, business/industry partners, and advisory committee members are a wealth of knowledge and can assist teachers in developing rigorous, real-world assignments.

Classroom learning should also cross disciplinary boundaries. For example, students in a CTE class may create written technical documentation relating to course content that is then reviewed and edited by an English class. Another way to immerse students in partnerships is to offer and involve students in career and technical student organizations (CTSOs). For a listing of CSTOs in Wisconsin please see the appendix.

- ***Infuse technology as a natural extension of the content.***

An essential component of 21st century skill outcomes for all individuals pursuing post-secondary options and/or entering the military or workforce is the utilization of technology. Furthermore, today's students live with digital access to tools and resources that can aid in learning. Teachers can capitalize on the use of these tools to empower young minds and enhance creativity, innovation, and learning. Students can create a digital story, a wiki, a blog, or a web page instead of a traditional written or oral report to document learning and intended assignment outcomes. What is even more exciting than the technology itself is that students can engage in collaborative learning to teach each other how to learn and use those technologies.

- ***Incorporate team-building, critical thinking, and communication skills through the use of career and technical student organization (CTSO) or similar student organization activities.***
  Teachers should require diverse students to relate to each other through collaborative learning. When students have opportunities to relate to other students, engage in critical employability skills such as oral and written communication, planning, problem-solving, critical and analytical thinking, and teamwork, they are naturally engaged. In addition, employers demand expert thinking and complex communications, so when teachers require students engage in the scientific method collaboratively to solve problems, student motivation to learn increases and students are exposed to diverse perspectives they would not have considered if they worked independently. This type of classroom environment also fosters creativity and innovation.

  Not only can students learn academic, technical, and employability skills from collaborative, real-world course assignments, students can also master critical skills employers demand when they participate in co-curricular activities such as career and technical student organizations. In a career pathway, teachers and other education professionals should expect and encourage student participation in activities in and beyond the classroom environment to bridge the gap between formal and informal learning. CTSOs are essentially an extension of the classroom environment and student participation in such organizations as a part of individual Career Pathways will enhance learning in the areas of reading, writing, analytical thinking, reasoning, problem solving, and teamwork.

- ***Attract, prepare, and support each and every student and ensure equitable outcomes for different student groups.***
  If properly designed and implemented, a career pathway should open doors for and attract numerous students, regardless of academic or social abilities, socio-economic status, ethnicity, or gender. In addition, all students need to be provided with academic and social supports to be successful throughout the career pathway. The career pathway team must ensure there are adequate academic support mechanisms in place that incorporate school district and post-secondary institutional resources and practices such as regular and ongoing interaction between students and school counselors/advisors, Individualized Education Plans (IEP), and IEP teams, etc. Also, the school district, post-secondary institution, and/or career pathway team should have a system in place to identify and engage students who are falling behind or at risk of falling behind and provide academic interventions that support successful student outcomes.

A Deeper Look at the Ten Components

Teaching and Learning	Needs To Be Considered	In the Planning Stage	Partially Implemented	Fully Implemented
Focus on rigor and relevance for diverse students.				
Vary instructional strategies and employ contextualized work-based, project-based, and problem-based learning approaches along with multiple assessments.				
Immerse diverse students in school and community partnerships.				
Infuse technology as a natural extension of the content.				
Incorporate team-building, critical thinking, and communication skills through the use of career and technical student organization (CTSO) or similar student organization activities.				
Attract, prepare, and support each and every student and ensure equitable outcomes for different student groups.				

Accountability and Evaluation Systems

Evaluating programs and ensuring accountability for decisions made is critical in career cluster and pathway implementation. Simple questions asked such as "Do the efforts made have an impact?" are good to keep in the forefront in an accountability and evaluation system.

The data obtained can be informal and formal. Data can be qualitative and quantitative. The data considered in the accountability and evaluation design should be for a regular, systematic data collection so that decisions and improvements can be made. Formal data collection systems in which data elements are currently collected should be integrated into the accountability and evaluation system for Career Cluster and Pathway implementation as well as incorporating essential new data elements. Examples of state-level data systems to consider when creating an evaluation design include:

- Client Reporting at WTCS (http://systemattic.wtcsystem.edu/MIS/default.htm)
- Career/Tech Prep Indicators (http://systemattic.wtcsystem.edu/reports/STW/Index.htm)
- CTEERS (http://cte.dpi.wi.gov/cte_veershome)
- WINSS (http://winss.dpi.wi.gov/)
- Program of Study Listing by Wisconsin Technical College http://cte.dpi.wi.gov/files/cte/xls/11clusterposdb.xls
- Wisconsin Career Pathway Website (www.wicareerPathways.org)
- Local School District Data

Education professionals need to build their own evaluation and data collection systems, including informal ways supporting holistic views of Career Pathway implementation. It is imperative for individual teachers and school counselors to work with school and district personnel as well as post-secondary partners to solicit necessary data for decision making and continuous improvement.

Steps

➢ ***Identify and design an accountability and evaluation system which will meet the needs of federal and state regulation as well as provide timely evaluation information to all stakeholders.***
Education professionals should keep the end in mind when designing the evaluation system, which should align with the purpose of implementing Career Clusters and Pathways. Questions answered in the accountability and evaluation system will include the impact of the program of study on student achievement and engagement as well as meeting the local or regional workforce skill requirements.

Evaluation systems should answer questions such as how many students are engaged in a specific Pathway; what are the course completion and graduation rates for students; or what are the rates of remediation at the post-secondary level. Information from business and industry regarding whether employees are coming to them fully prepared with the skills for the occupation should be included. At a state level WTCS collects this data within the

employer follow-up surveys (http://www.wtcsystem.edu/reports/data/employer/index.htm). Data charts should include information education professionals can collect to make data driven decisions.
Following is an example of a Perkins Annual Performance, Accountability, and Financial Status Report (CAR) which contains some data elements education professions can use.

Wisconsin Secondary CPA 4 Core Indicators by Year								
	Core Indicators							
Year	**1S1**	**1S2**	**2S1**	**3S1**	**4S1**	**5S1**	**6S1**	**6S2**
2010								
Actual	73.8%	69.2%	88.4%	95.5%	95.5%	93.5%	22.5%	95.8%
Standard	74.0%	73.0%	82.7%	81.8%	82.8%	96.8%	25.0%	90.5%
90%_Standard_Met	Y	Y	Y	Y	Y	Y	Y	Y
2009								
Actual	76.9%	74.0%	89.6%	95.2%	95.2%	93.5%	36.3%	93.1%
Standard	71.7%	72.0%	81.7%	81.7%	81.8%	96.8%	25.0%	90.0%
90%_Standard_Met	Y	Y	Y	Y	Y	Y	Y	Y
2008								
Actual	75.8%	74.2%	92.8%	93.8%	93.8%	93.4%	25.2%	90.7%
Standard	75.8%	74.2%	87.7%	81.7%	81.7%	95.0%	25.0%	90.0%
90%_Standard_Met	Y	Y	Y	Y	Y	Y	Y	Y

1S1: Academic Attainment - Reading
1S2: Academic Attainment - Math
2S1: Technical Skill Attainment
3S1: Secondary School Completion
4S1: Student Graduation Rates
5S1: Secondary Placement
6S1: Nontraditional Participation
6S2: Nontraditional Completion

Source: DPI Career and Technical Education Enrollment Reporting System

- ***Examine data already collected to determine if there is existing data collection and elements that can be used in the accountability and evaluation system of Career Pathway implementation.***

Student achievement information originates from data sources such as state standardized exams including the Wisconsin Knowledge Concepts Examination (WKCE), Wisconsin Reading Comprehension Test (WRCT), American College Testing (ACT), Scholastic Aptitude Test (SAT) exams, graduation rates, drop-out rates, course pass/fail rates, Grade Point Average (GPA), and a multitude of data elements already collected at either a state level or local level. This information may be valuable in the accountability and evaluation system.

Additionally education professionals may collect data on a local level on students such as keeping track of students beyond graduation on an informal basis.

- ***Collect local and state data to evaluate Career Cluster and Pathway Implementation and provide formal and informal reporting to stakeholders.***

In addition to utilizing already existing data to evaluate the Career Cluster and Pathway framework, some data elements may be missing and the evaluation and accountability system should develop a plan to collect the data. Identification of the type of data needed and the source of the data will guide reporting and decision making around the Career Cluster and Pathway framework.

Accountability and Evaluation Systems	Needs To Be Considered	In the Planning Stage	Partially Implemented	Fully Implemented
Identify and design an accountability and evaluation system which will meet the needs of federal and state regulation as well as provide timely evaluation information to all stakeholders.				
Examine data already collected to determine if there is existing data collection and elements that can be used in the accountability and evaluation system of Career Pathway implementation.				
Collect local and state data to evaluate Career Cluster and Pathway Implementation and provide formal and informal reporting to stakeholders.				
Utilize data to inform and implement change.				

Course Sequences

Course sequencing is an important part of a program of study. Students gather valuable knowledge and skills from course content, building higher level skills as they progress through advanced level courses. The Program of Study must include **both** the secondary and post-secondary coursework and experiences. The emphasis in a specific career pathway must be on one or more of the following: high-wage, high-demand, and/or high-skill jobs.

Non-duplicative sequences of secondary and post-secondary courses within a POS ensure that students transition to post-secondary education without replicating classes or requiring remedial coursework. Furthermore, by planning a secondary and post-secondary sequence of courses within a Career Pathway, students can maximize opportunities for course articulation. ***Please see pages 77-78*** for a chart which describes and explains the differences between advanced standing and transcripted credit.

Steps

- ***Map out the required and recommended academic and career and technical courses and/or other work-based learning opportunities and educational experiences in each Career Pathway.***

The process for mapping out required and recommended academic and CTE courses is as follows:

- Identify relevant national, state, and industry standards
- Align standards to existing courses and/or update courses as needed
- Go to the Career Pathways web site (www.wicareerPathways.org) to access an online POS template
- Insert the required secondary courses into the template
- Design a course path from grades 9 through 14 or 16 and beyond including career-related courses
- Sort the required courses into technical core and technical specialty
- Add recommended opportunities for work-based learning, Career and Technical Student Organizations (CTSO) participation, volunteering, etc.
- Complete the template by recommending electives that enhance the pathway experience.
- Insert the required and elective post-secondary courses into the template

- ***Begin with introductory courses at the secondary level that teach broad foundational knowledge and skills that are common across all Career Pathways.***

The secondary component must include these essential elements:

- Meets state academic standards and grade-level expectations
- Meets high school graduation requirements
- Meets post-secondary entry/placement requirements
- Provides foundation knowledge and skills in chosen clusters
- Provides opportunities for students to earn college credit through dual/concurrent enrollment or articulation agreements

In secondary career pathway courses, students should engage in academics learning, participate in career experiences, and develop basic work skills.

- ***Progress to more career and occupationally-specific courses at the secondary level that provide knowledge and skills required for entry and advancement in a chosen Career Pathway.***
  As students progress through the Career Pathway, more technical skills are developed, they engage in more challenging academics, and work-based learning experiences occur.

  The secondary component of the Career Pathway must also define curriculum content (what is taught) and include:

  - Technical, academic, and 21st century employability skills required by employers
  - State-mandated curriculum standards and graduation requirements
  - Entrance requirements of partnering post-secondary institutions (i.e., Accuplacer, Compass, TABE, ACT, SAT, etc.)
  - Alignment and articulation with post-secondary certificates, diplomas, associate's degree programs and/or baccalaureate programs, and;
  - Opportunities for students to earn college credit through dual/concurrent enrollment or articulation agreements.

- ***Offer opportunities for students to earn post-secondary credit for coursework taken during high school.***
  Opportunities for high school students to take college-level course work in order to get a head start on earning college credits while continuing to fulfill high school graduation requirements is accomplished through course articulation (transcripted credit/advanced standing). Secondary schools are required to note the course articulation on student high school transcripts (see Section N of the PI 26 Education for Employment documentation, which focuses on student transcripts, reporting, and accountability at http://cte.dpi.wi.gov/files/cte/pdf/e4e09guide.pdf). Formal articulation agreements between public school districts and post-secondary institutions must be in place in order for the credit to be valid. Once established, students benefit from articulation as it helps them transition seamlessly from one institution to another and/or one level of education to another (see Credit Transfer Agreements). Opportunities for students to earn college credit through dual/concurrent enrollment or articulation agreements must be included in the POS.

- ***Progress to more career and occupationally-specific courses at the post-secondary level.***
  In post-secondary courses, students develop advanced technical skills, advanced academic skills, and gain additional worksite experience.

  The post-secondary component must include these essential elements:

  - Additional opportunities for students to earn college credit through course transcription (transcripted credit or advanced standing)
  - Alignment and articulation with baccalaureate programs
  - Industry-recognized skills and knowledge in each cluster area
  - Opportunities for placement in the chosen Career Clusters at multiple exit points

- ***Focus on lowering remediation.***
  Understanding the Career Pathway course transition between grades 12 and 13 requires conversations between secondary and post-secondary teachers and staff to:

  - Discuss threshold program content expectations,
  - Identify areas of content gaps/overlap,
  - Understand academic and technical performance expectations for the beginning of the 13th grade level of the POS,
  - Identify pre-requisites that colleges may require for individual programs and courses, and

- Identify new assessments, course offerings or other ideas for smoothing and accelerating students' progress on their Programs of Study.

As part of these discussions, post-secondary institutions often have data to identify areas of high rates of incoming student remediation. Data is also often available on incoming high school students' remediation rates sorted by their college program choices. Basic data such as this is typically available for the state's technical colleges by college as well. The technical college Career/Tech Prep representative can help you locate and navigate through this data as well as with other data that might be available. Contact information for Career/Tech Prep coordinators can be found at (http://www.wicareerPathways.org/ContactUs.aspx). Here is a sample agenda of a high school articulation meeting with a technical college:

High School Articulation Meeting
2009-2010
High School - Post-secondary Agriscience

Members present – high school agriscience teachers, post-secondary agriscience faculty, Career/Tech Prep coordinator, college dean, business and industry representatives

Agenda

- Dean/Lead faculty welcome
- Program updates—new programs, changes to existing programs, student enrollment data, graduate follow up highlights
- Career pathways update: review cluster model for specific content areas
- Industry updates: Advisory committee report, industry needs assessment
- Curriculum/competency alignment: existing courses available for articulation, discussion of college curriculum, skills needed for success
- Professional development opportunities: what is needed, best time to offer it

Another method for gaining information to help ensure smooth course sequencing is to have teachers review in detail course materials for the subsequent course in the career pathway. In some cases a teacher could potentially assist with or audit the content of the next sequential course so that a better understanding of expectations of rigor and depth could be developed.

Course Sequences	**Needs To Be Considered**	**In the Planning Stage**	**Partially Implemented**	**Fully Implemented**
Map out the required and recommended academic and career and technical courses and/or other work-based learning opportunities and educational experiences in each career pathway.				
Introductory courses at the secondary level teach broad foundational knowledge and skills that are common across all career pathways.				
Progress to more career and occupationally-specific courses at the secondary level that provide knowledge and skills required for entry and advancement in a chosen career pathway.				
Offer opportunities for students to earn post-secondary credit for coursework taken during high school.				
Progress to more career and occupationally-specific courses at the post-secondary level.				

Articulation Agreements

Articulation refers to aligning high school and post-secondary curricula to create sequences of courses offering skill attainment with unnecessary duplication. Articulation focuses on providing opportunities for high school students to take college-level course work in order to get a head start on earning college credits while continuing to fulfill high school graduation requirements. Formal articulation agreements must be in place in order for the credit to be valid.

There are two types of articulation—*Advanced Standing and Transcripted Credit*. Advanced Standing is also referred to as "credit in escrow;" the credit is delayed until the student enrolls in the technical college program. Transcripted Credit is "direct credit;" the student is earning credit directly from the technical college and has an issued transcript. **Please see page 77-78** for a chart which further explains and defines the differences between advanced standing and transcripted credit.

Articulation agreements are formal agreements created between public school districts and post-secondary institutions. Students benefit from both types of articulation as it helps them transition seamlessly from one institution to another and/or one level of education to another.

Wisconsin's Career/Tech Prep program also aims to promote and support high school to college transitions for career and technical education students. Career/Tech Prep grants may be awarded for enhancing a high school student's technical and academic skills and providing opportunities for transition to post-secondary education or into the workforce.

Steps

- ***Provide a systematic, seamless process for students to earn college credit for post-secondary courses taken in high school.***
  The goal of articulation or credit transfer agreements is to create opportunities for students to transfer high school credit to any two- and four-year institution in the state that offers the POS and/or transfer credit earned at a two-year college to any other two or four-year institution in the state that offers the POS. Because POS must include both secondary and post-secondary course sequences, it is not complete until all possibilities for articulation are reviewed or created and incorporated into the POS by the career pathway team.

  Articulation agreements from high school to technical colleges and universities are listed on technical college and university websites. Course by course articulation agreements among post-secondary institutions can be found on the UW System Transfer Information System web site. For further information please visit the following websites: http://www.witechcolleges.org/transfer/agreements_by_college.php and http://www.uwsa.edu/tis/

- ***Note the college credit earned.***
  When students earn college credit through advanced standing or transcripted credit or completion of an articulated course, the credit must be noted on either the high school transcript (which should be requested by the technical college) or directly on the technical college transcript. Making certain the credits appear on the student's transcript facilitates a seamless transfer into the post-secondary portion of the POS without the need for additional paperwork or petitioning for credit. Credit for Prior Learning may also be implemented when needed.

As stated earlier, PI 26 requires secondary schools to note the course articulation on student high school transcripts (see Section N of the PI 26 Education for Employment documentation, which focuses on student transcripts, reporting, and accountability at http://cte.dpi.wi.gov/files/cte/pdf/e4e09guide.pdf).

- ***Describe expectations and requirements***

Articulation agreements must, at a minimum, clearly detail teacher and faculty certifications/qualifications, if there is an agreement about which teacher(s)/instructor(s) from a particular school/institution will teach the articulated course or sequence of courses. The agreement must also clearly indicate course prerequisites, post-secondary entry requirements, location of courses, tuition reimbursement, and credit transfer process so students, parents, and secondary and post-secondary partners have a clear understanding of how the articulation process works and to be certain the student gets credit for articulated courses completed as part of a POS.

Articulation Agreements	Needs To Be Considered	In the Planning Stage	Partially Implemented	Fully Implemented
Provide a systematic, seamless process for students to earn college credit for post-secondary courses taken in high school.				
Credits earned are noted on the high school transcript.				
Describe expectations and requirements.				

School Counseling and Academic Advising

Secondary Counseling

Academic and career counseling is provided through PK-12 comprehensive school counseling programs and post-secondary advising programs, and helps students make informed decisions about which Career Pathway to pursue. Many professionals use “who am I?" "where am I going?" and "how do I get there?" as a framework to help students navigate the career development process. Wisconsin’s Model Academic Standards for School Counseling identify three standards in the career domain. In order to meet those standards, school counselors, in collaboration with other educators, develop a program of career education services that includes PK-12 career development curriculum, responsive services, individual planning and system support. This program is shared with school and district staff, including the local board of education.

Post-secondary Counseling

Post-secondary advisors assist students in educational program planning and course selections consistent with their career goals. Since post-secondary students may be at different levels of readiness to select a program of study, or in need of assistance in selecting a new career direction, the services of various student support staff are integral to delivering career development services. Depending on the size of the post-secondary institution and its staffing patterns, career development professionals, counselors, financial aid administrators, special services support staff and others may be involved in supporting students to select and persist in POS choices.

Steps

- ***Based on state and national school counseling or advising standards.***
  It is required that a school district’s comprehensive school counseling program must comply with PI 8.01(2)(e). It is further recommended that school districts ground their comprehensive school counseling programs in the Wisconsin Department of Public Instruction’s Model Academic Standards for School Counseling as well as in the American School Counselor Association’s National Model (ASCA) and its Ethical Standards for School Counselors, and in the National Career Development Guidelines. Counselors, advisors, and other educators involved in delivering school counseling program activities and services take advantage, on a regular basis, of professional development opportunities which will prepare them to implement and improve the program. These may include trainings in the ASCA National Model; the Level I, II, and III trainings in the Wisconsin Comprehensive School Counseling Model; POS trainings; and relevant workshops and seminars at the conferences of their professional associations.

- ***Ensure school counselors have access to up-to-date information about Career Pathway offerings.***
  Successful implementation of Career Pathways in a school district requires a team approach. A team consisting of school counselor(s), core academic teachers, CTE teachers, a CTE coordinator, a curriculum specialist, business and industry representatives, post-secondary partners, and legislators spearheads the development and

implementation of quality POS, and assists with ongoing revisions to them. Partnerships among secondary and post-secondary school counselors and academic advisors enable effective Programs of Study to be built. Once Career Pathway information is disseminated to parents, students, and other stakeholders, school counselors and teachers work together with individual students to assist in career and interest exploration and decision making.

- ***Offer information and tools to help students learn about post-secondary education and career options.***
  Teachers and school counselors must be aware of post-secondary and career options including prerequisites for a selected POS. Because it is nearly impossible for every student to be aware of every possible post-secondary program option and career within a given Career Pathway, teachers and school counselors need to know where to direct students for such information. The Wisconsin Career Pathway website at www.wicareerPathways.org is a robust resource where professional educators can locate information on program options for specific Pathways at Wisconsin post-secondary institutions. As an assignment in a Career Pathways course, students may also be required to research post-secondary and career options. Additional web resources are also noted throughout the guide.

- ***Offer resources for students to identify student career interests and aptitudes and to select an appropriate Career Pathway.***
  In the secondary setting, teachers and school counselors provide opportunities for students to take career interest and learning style inventories beginning in 4th grade and continuing through high school with benchmarks at 8th and 12th grade. Because it is optimal for students to base their career plans on a variety of career awareness and exploration experiences, inventories that assess work values, learning styles, career interests and aptitudes, etc., are explored as part of career classes and are incorporated into Career Pathway courses. Several inventories have been written for students at the elementary level. School counselors and teachers will want to be knowledgeable about the inventory, its development, and its validation so they can speak accurately to parents and students about what the results indicate. In this way, school counselors and teachers can assist students and their parents to interpret inventory results and compare the results from multiple assessments to determine which Career Pathway is right for them. Career Pathway interest can change as the student explores more avenues for their future.

- ***Provide information and resources for parents.***
  Parents are an integral component of academic and career planning. They are not only their children's first career development role models, they also generally want what is best for their children and may strongly influence course selection, post-secondary, and career decisions. Therefore, it is ideal for parents to be involved in the career exploration and development processes that their children experience. Because parents may have limited viewpoints about post-secondary and career options based on their personal experiences, the school counselor's goal is to communicate on a regular basis about the options available. Providing parents with credible resources and information will help them to assist their students to make informed career-planning decisions.

- ***Offer Web-based resources and tools for obtaining student financial assistance.***
  Once a student selects a Career Pathway, the student and his or her parents will be interested in information about financing the post-secondary choices. Educators can provide access to that information. They can also direct students and parents to other experts who can help students learn more about financial assistance and how to apply for it.

A Deeper Look at the Ten Components

School Counseling and Academic Advising	Needs To Be Considered	In the Planning Stage	Partially Implemented	Fully Implemented
Based on state and national school counseling or advising standards.				
Ensure school counselors have access to up-to-date information about Career Pathway course offerings.				
Offer information and tools to help students learn about post-secondary education and career options.				
Offer resources for students to identify career interests and aptitudes.				
Provide information and resources for parents.				
Offer web-based resources and tools for obtaining student financial assistance.				

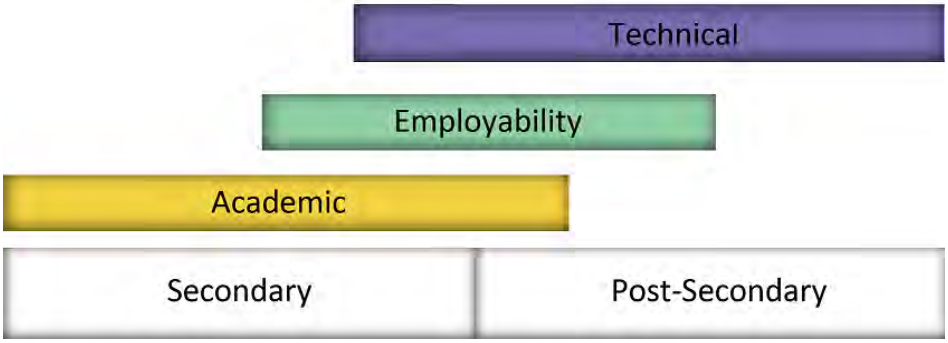
Technical Skill Attainment

National, state, and/or local assessments provide ongoing information on the extent to which students are attaining the necessary knowledge and skills for entry into and advancement in post-secondary education and careers in their chosen Career Pathways.

Assessments vary by the target skill being assessed including:

- Technical skill attainment
- Academic skill attainment
- Employability skill attainment (21st century skills)

Assessments occur at a variety of points in time from secondary to post-secondary, depending on the assessment. Usually post-secondary focuses more on technical skills and employability skill assessments. These assessments are usually very specific to a specific industry, such as tests in welding or dental hygiene. Secondary level tests focus primarily on academic and employability skills. They do, however, incorporate some technical skill assessments.



Career Pathways must include the acquired technical, employability, and academic skill attainments throughout the journey of a program of study. Career Pathways include and ultimately lead to required licensure, credential or other recommended attainment for the occupations within the Pathway, thus aligning secondary and post-secondary Pathways with educational and work requirements. The assessment process is built within educational programs ensuring students are acquiring technical, academic and employability skills. Skill assessments can be traditional paper/pencil tests, but may also be other types of formal and informal evaluation. For example, a teacher or business/industry expert may complete a rubric or checklist consisting of skills and competencies based on observation of a student completing a performance task or process. Also, a rubric or checklist may be used to assess cumulative skills students used to create an end-product.

Skill attainments may include employability skill certificates, state certified co-ops, WorkKeys, or a variety of specific occupational skill attainment measures such as Automotive Service Excellence (ASE) or National Council

Licensure Examination (NCLEX) or other certifications. Academic skill attainment is often measured in Compass, Accuplacer, TABE, ACT, SAT or state standardized tests such as WKCE. **The following link contains numerous certifications students may earn.**

- ***At the secondary level, measures of skill attainment are incorporated at appropriate places in the Pathway, demonstrating the student is ready for college or a career.***
  Skill assessments ensure the student is ready to enter and succeed in post-secondary educational programs or employment. Technical-skill, academic-skill, and employability-skill attainment measures technical-skill proficiencies, employs state-developed/approved assessments, and/or industry-approved assessments. Performance-based assessment items are incorporated to the greatest extent possible so students are allowed opportunities to demonstrate application of their knowledge and skills. National or state skill standards are incorporated throughout the POS curriculum.

  Examples of secondary skill-attainment measures may include employability skills certificates, academic skill measures including ACT or SAT or Accuplacer examinations, and technical-skill attainments such as a state certified co-op completion. The type of skill attainment that is most appropriate should be determined by the career pathway team, where multiple stakeholders are involved and effectively access its effectiveness.

- ***At the post-secondary level, measures of skill attainment are incorporated at appropriate places in the Pathway, demonstrating the student is ready for an occupation.***
  Skill assessments ensure the student is ready to enter and succeed in a career. Technical-skill, academic-skill and employability-skill attainment measures technical-skill proficiencies, employs state-developed/approved assessments and/or industry-approved assessments. Performance-based assessment items are incorporated to the greatest extent possible so students are allowed opportunities to demonstrate application of their knowledge and skills. National or state skill standards are incorporated throughout the POS curriculum.

  Post-secondary-skill attainments include employability certificates such as WorkKeys and technical-skill attainments specific to the occupation such as regulation and licensure, apprenticeship completion, ASE, NCLEX, and other occupational specific credentials and licenses.

A Student's Formal Skill Attainment Journey for Health Science

High School

- Accuplacer or Compass Assessment
- Obtain Certified Nursing Assistant (CNA) Certificate
- WorkKeys assessment/ certification

Post-secondary

- WorkKeys assessment/ certification
- National Council Licensure Examination (NCLEX)

Technical Skill Attainment	Needs To Be Considered	In the Planning Stage	Partially Implemented	Fully Implemented
At the secondary level, measures of technical skill attainment are incorporated at appropriate places in the Pathway, demonstrating the student is ready for college or a career.				
At the Post-Secondary level, measures of skill attainment are incorporated at appropriate places in the Pathway, demonstrating the student is ready for a specific occupation.				

Policies and Procedures

This section addresses how federal, state, and local policies and procedures may support and promote the development and implementation of a Program of Study. Policy efforts that focus on rigorous academic and technical courses, community and employer participation, school counseling, career development, transcripted credit, education for employment, high school graduation requirements, vertical and horizontal curriculum alignment, articulation agreements, career and college readiness, evaluation and accountability, professional development, and partnerships are essential to advance career clusters and pathways within Wisconsin schools districts.

Steps

- ***Review and revise existing school/district and post-secondary institutional policies and examine procedures to determine the impact on career cluster and pathway implementation.***
  Existing policies and procedures are a good starting point to determine if policies and procedures promote or conflict with Career Pathway implementation. State-level policies include, but are not limited to,
  - → the state Perkins plan (http://systemattic.wtcsystem.edu/Grants/Perkins-4/planning/five-year-plan-v9a.pdf).
  - → the credit for prior learning at the WTCS (http://www.wtcsystem.edu/board/pdf/policy_manual.pdf).
  - → grant guidelines and application materials (http://systemattic.wtcsystem.edu/Grants/Perkins-4/perkins4.htm for WTCS and http://dpi.wi.gov/cte/cpahome.html for DPI).

  The school/district may already have policies established. Examples of local policies or procedures which may include, but are not limited to,
  - → the mission and vision of CTE programs.
  - → procedures for informing students of career pathways.
  - → career development policies and practices.
  - → work-based learning opportunities.
  - → Career/Tech Prep policies.

  A conversation with a local CTE coordinator and a post-secondary Career/Tech Prep coordinator may be beneficial. A listing of the 16 Career/Tech Prep coordinators and contact information is available at http://www.wicareerPathways.org/ContactUs.aspx

- ***Determine and ensure education professionals, students, and community stakeholders are aware of policies and procedures supporting Career Cluster and Pathway implementation.***
  First and foremost all stakeholders involved in this process should be aware and working within the existing or newly-developed policy and procedures supporting POS implementation. This may involve a school/district/post-secondary institution evaluating stakeholders on knowledge and application of the policies and procedures such as understanding the state Perkins plan and reviewing the Career/Tech Prep grant application. See the professional development component for further information on educating stakeholders about the career cluster and pathway implementation.

- ***Provide for sufficient funding and other resources for career cluster and pathway implementation.***
  Time and time again, education professionals are enthusiastic about developing career clusters and pathways and implementing a career cluster and pathway framework, but their passion to get things done is stifled by limitations and challenges presented in their schools/districts. Administrators need to dispel attitudes such as *what is the minimum we have to do to be in compliance with Perkins IV?* Instead, administrators need to be champions for fully implementing a career cluster and pathway framework for the benefit of students, education professionals, the community, business/industry, and the local or regional economy. Administration also needs to support and appoint leaders to career cluster and pathway teams who will serve as the movers-and-shakers within the school/district and model positive examples for others to follow.

  Ongoing Studies are being conducted to determine education professionals needs to take career clusters and pathways to the next level of deeper and meaningful implementation and the overwhelming response is "time to do the work" and "resources to support the work." Funding is needed to support professional development (see Professional Development) and staff members need to be allowed dedicated time blocks to meet as a career cluster and pathway teams with stakeholders and partners to develop and update curriculum, connect with partners, develop, review and update articulation agreements, and the list goes on. Sometimes support staff is needed to assist with research; data collection and reporting, written documentation, web site development, and other career cluster and pathway framework related activities. In this guidebook, a more detailed overview of the work that needs to be done by education professionals is provided. Education professionals cannot succeed without administrative support.

  Schools, districts, and post-secondary institutions may not have all the resources they need to implement career cluster and pathway framework well. Tough decisions will need to be made each year as to what resources exist, how existing resources can be redirected to this purpose; and how partners and stakeholders may be able to leverage additional resources for the task.

- ***Establish formal procedures for the needs assessment, design, implementation, and continuous improvement of Career Pathways.***
  Education professionals from both secondary and post-secondary should work as a team with other education, business and industry, legislative, workforce and economic development partners to conduct needs assessments relating to workforce and labor market information (see the partnership component). Using the results of the needs assessment, the team should determine which career pathway(s) needs to be developed in the school district. It is beneficial if the school/district has a uniform process for accomplishing this task so that as new career cluster and pathway teams form, processes and procedures are in place to guide their work. Once a career pathway has been designed, a lot of work needs to happen over the next couple of years to update curriculum, create and revise articulation agreements, establish and maintain partnerships, evaluate student and stakeholder experiences, and further lay the foundation for successful career cluster and pathway framework implementation and continuous improvement. In Wisconsin, formal develop a curriculum (DACUMS) facilitated events conducted by the Worldwide Instructional Design System team or other skilled facilitators are excellent ways to obtain information from business and industry. Once again, having formal practices documented in the school/district will help guide other career cluster and pathway teams to be efficient and effective in their efforts.

- ***Ensure opportunities and support for any student to participate and succeed in a Career Pathway.***
  Not only should administrators be concerned with support for education professionals and stakeholders involved in career cluster and pathway teams, they need to make certain that every student in the school/district has an equal opportunity to participate and be successful in completing a program of study. First, career cluster and pathway framework options must be widely distributed through school and district publications and communications such as the course catalog, student handbook, school/district web site, etc. Resources are needed

so all students can use a web-based career guidance system such as WISCareers or Career Cruising, e-portfolios, and other career development software/materials in their classes.

Some districts in Wisconsin require that students declare a Program of Study in the 8th grade. Others incorporate **ILP**s into their district graduation requirements. By demonstrating support for effective teaching and learning strategies, encouraging development of and student participation in work-based learning and credit transfer opportunities, administrators will be creating options for every student to be successful in a career pathway. Refer to the School Counseling and Advising component and the Wisconsin Comprehensive School Counseling Model for additional information.

- ***Ensure opportunities for secondary students to develop and refine an Individual Learning Plan (ILP).***
  Most Wisconsin schools/districts utilize the comprehensive school counseling model. ILPs are a tool to meet the benchmarks within the Model Academic Standards for School Counseling. Students should begin developing an ILP in the 8th grade as they are planning courses for their 9th grade year. An ILP identifies what needs to be achieved and looks towards the future, incorporating activities in school and outside the school walls. Administrators can hold teachers and school counselors accountable for career and academic advisement (see School Counseling and Academic Advisement and Course Sequences). It is critical for students to use an ILP for their career and academic planning, share that plan with parents, educators, and others, and update it on a regular basis. Then, students should continue their ILP as they transition from secondary to post-secondary education options.

- ***Provide resources for long term sustainability of Career Cluster and Pathway frameworks.***
  Understand that full implementation of career cluster and pathway framework may take several years to launch and then will need to be reviewed and improved on a long-term basis. Just as school districts have policies and procedures for curriculum review and renewal, the career cluster and pathway framework will also need a schedule of renewal.

Policies and Procedures	Needs To Be Considered	In the Planning Stage	Partially Implemented	Fully Implemented
Review and revise existing school/district and post-secondary institutional policies and examine procedures to determine the impact on Career Cluster/Pathway implementation.				
Determine and ensure education professionals, students, and community stakeholders are aware of policies and procedures supporting Career Cluster/Pathway implementation.				
Provide for sufficient funding and other resources for Career Cluster/Pathway implementation.				
Establish formal procedures for the needs assessment, design, implementation, and continuous improvement of Career Pathways				
Ensure opportunities and support for any student to participate and succeed in a Career Pathway.				
Provide resources for long-term sustainability of Career Cluster and Pathway frameworks.				

SECTION IV - APPENDIX

The appendix portion of the guide includes many helpful materials for POS implementation. From data to support the process, to key terms, helpful web links, and resources, this portion of the guide will be growing with each passing year. If you have helpful materials that you would like to share, please send them to careerpathways@dpi.wi.gov.

Why are Career Pathways and Programs of Study Important to Educators?

Every Wisconsinite should have access to education or training past high school leading to a technical college degree or diploma, occupational credential, industry certification, or one's first two years of a four-year degree—to be pursued at whatever point and pace that makes sense for individual workers and industries. Every person who lacks basic skills must also have access to the basic education needed to pursue middle-skill occupational training.

Skills to Compete-Wisconsin

http://www.nationalskillscoalition.org/states/state-coalitions/wisconsin/

Today, middle skill jobs still represent the largest share of jobs in Wisconsin—some 54 percent—and the largest share of job openings into the next decade.

Wisconsin's Forgotten Middle Skills Job

http://www.nationalskillscoalition.org/assets/reports-/skills2compete_forgottenjobs_wi_2009-10.pdf

By connecting students to career pathways, improvements in education will be seen. Competitive Wisconsin (http://www.competitivewi.com/) believes that for Wisconsin to be a leader in the knowledge economy, Wisconsin must act urgently and strategically to advance the educational attainment of all Wisconsin citizens. Among the targeted goals are:

- 100 % high school graduation rate. Current drop-out rates-overall 1.9%, American Indians 4.4%, Latino/a 5.4 %, and African Americans 8.9%.
- 100% of high school graduates will be proficient or above in reading and mathematics. Current rates 74% in reading and 72% in math overall.
- Increase the rate of AP pass rates
- World languages should be available in 100% of elementary schools in the state.
- Increase achievement, reduce truancy, eliminate out of school suspensions and increase attendance rate to the statewide average for the Milwaukee Public School system.
- Public and private sectors should prioritize their investments in education proportionate to the return on investments, not only for individuals, but for our economic future.
- To produce or attract an additional 170,000 individuals with BA degrees and 170,000 individuals graduate degrees by 2020.

"It's an economic issue when the unemployment rate for folks who've never gone to college is almost double what it is for those who have gone to college. Education is an economic issue when nearly eight in 10 new jobs will require workforce training or a higher education by the end of this decade. Education is an economic issue when we know beyond a shadow of a doubt that countries that out-educate us today, they will out-compete us tomorrow." (Obama, 2010)

"The future of our communities and of our country, not to mention countless individuals, depends significantly on the ability of community and technical colleges—along with their partners in education and the employer community—to do a far better job of moving students to and through their institutions, toward better jobs, and toward continuing education over a lifetime." (McClenney, 2006)

National Leaders embrace the pathway initiative

"Unless the skills gap within the United States is closed and employers can find the workers they need, and job seekers have the skills to pursue the opportunities that will exist, then America's economy will remain vulnerable.... The stakes are high: freedom of trade and commerce; personal and political liberty; and national and individual security." (Sampson, 2001)

Current research shows students who are engaged in a rigorous and relevant sequenced curriculum with direct linkages to post-secondary programs or careers are more likely to graduate and are better prepared for success in a career or program. (Karp et al, 2007 and Lekes et al, 2007)

This initiative is not new. The National Association of State Directors for Career and Technical Education Consortium (NASDCTEc) and their Board of Directors assumed leadership of the Career Cluster Initiative in the United States, in conjunction with the Office of Vocational and Adult Education (OVAE) at the U.S. Department of Education. This initiative has identified 16 clusters representing career opportunities for the 21st century. (Losh, 2002) High schools and technical colleges have invested resources and talent over the past five to ten years to develop the concept and various implementation models. Among the major players are the National Association of State Directors of Career Technical Education Consortium; the League for Innovation in the Community College with its College and Career Transitions Initiative (CCTI); the Workforce Strategy Center; the National Career Pathways Network (NCPN); the Center for Occupational Research and Development (CORD); the Community College Research Center (CCRC) at Columbia University; the Ford Foundation's Bridges to Opportunity Initiative; and the Joyce Foundation's Shifting Gears initiative [which supports the Regional Industry Skills Education (RISE) Initiative at technical colleges and workforce boards in Wisconsin].

Although the Career Cluster and Pathway initiative began and continues to be pushed from Career and Technical Education areas it is important to understand the initiative goes beyond Career and Technical Education. All facets of education are involved in preparing youth through a rigorous curriculum in preparation for college and a career.

Career Clusters are broad occupational groupings...an organizing tool defining education for post-secondary preparation and careers using 16 broad clusters of occupations and 79 pathways with validated knowledge and skill standards that ensure opportunities for all students regardless of career goals and interests. (For more specific information on the clusters and pathways please see the appendix).

Whereas career clusters are organized around occupational groups, similarly industry clusters or sectors are organized around industry. Sometimes career clusters align perfectly with an industry sector or cluster, sometimes not. This can be confusing to some as it may appear a specific industry is apparent in the clusters. For example, the energy industry sector or welding does not have a specific cluster as the occupational groupings in the industry sector fall within several career clusters including manufacturing, and architecture and construction.

However, it is important to note that Wisconsin colleges, employers and workforce partners are also involved in Career Pathway work for **adults,** who are beyond the traditional age of schooling. These learners need efficient and accelerated entry into the Career Pathways in order to master the content needed for higher-skills employment, 21st century jobs in emerging areas of Wisconsin's economy. Information on a focal point of these efforts, Wisconsin's RISE (Regional Industry Skills Education) initiative is available at www.risepartnership.org. Although the Program of Study work addressed in this guide and the RISE efforts in Wisconsin are designed to serve individuals of differing ages with multiple economic and family circumstances (and who, therefore, will access pathways through different methods and on different timelines), the two efforts are readily reconcilable as they share many core concepts as well as the structure of Career Clusters and Career Pathways, etc.

Key Terms

- **Active learning** – "Anything that students do in a classroom other than merely passively listening to an instructor's lecture." *(Paulson & Faust,* http://www.calstatela.edu/dept/chem/chem2/Active/index.htm*).*
- **Accuplacer** – Admissions/entrance exam used for various higher education institutions (typically technical colleges). Accuplacer is an adaptive exam which means the questions are chosen for the student based on answers provided in previous questions. The other two commonly used admissions/placement exams in Wisconsin Technical Colleges are the COMPASS test and the TABE (Test of Adult Basic Education).
- **Advanced placement (AP)** – Wisconsin post-secondary Institutions participate in the College Board Advanced Placement (AP) Program and typically award course exemptions and college credit to entering students with qualifying scores on individual exams in various general education and humanities content areas.
- **Advanced standing (AS)** – A high school student who has successfully completed a course taught by a high school teacher using a high school curriculum wherein the high school and a technical college have aligned curriculum competencies and developed an articulation course agreement. The credit is awarded upon enrollment in a technical college; however, grades are not recorded on a technical college transcript.
- **Apprenticeship** – Apprenticeship programs assist registered indentured apprentices to acquire the related technical knowledge and skills to augment the on-the-job experiences for all aspects of their trade. Both the employer and the apprentice must be contracted with the Bureau of Apprenticeship Standards to begin an apprenticeship.
- **Articulation agreement** – An articulation agreement is a formal agreement between institutions that allows credit for a course or sequence of courses taken at one institution to be applied in specific programs at another institution. These agreements may be between a high school and a post-secondary institution, or among post-secondary institutions.
- **Associate in Applied Science Degree** (AAS) – An AAS Degree helps individuals prepare for, or advance in, a particular occupation or field. Most AAS degrees require 60-70 credits and consist of technical studies, general studies, and electives. Time to completion varies widely. Some or all credits may be applied toward a bachelor's degree program at a four-year college. In Wisconsin the technical colleges award AAS degrees.
- **Associate in Arts or Associate in Science Degree** – An Associate in Arts or an Associate in Science is a degree awarded by technical colleges in Wisconsin intended to transfer to a four-year college or university.
- **Associate of Arts and Science Degree** – An Associate of Arts and Sciences Degree is awarded to an individual for completion of a program that is intended for transfer to a four-year college or university. The degree requirements usually include courses in fine arts, humanities, mathematical and natural sciences, and social sciences.
- **Bachelor's degree** – A bachelor's degree is an academic degree awarded to individuals for completion of an undergraduate major that generally lasts for four years.
- **Bridge certificate** – A term used in the WTCS wherein a degree program begins with a certificate. Completion of the certificate allows the student to continue on in the degree program and/or use the skills developed in the certificate to take a first step into employment in their career field.
- **Business and education partnership** – This partnership is a collaborative relationship that is mutually beneficial for students, staff, industry experts, and/or community members to increase student readiness, employability skills, and acquisition of academic and technical skills.
- **Career** – A chosen profession, field of work or calling.
- **Career Clusters** – In their simplest form, Career Clusters are groupings of occupations/career specialties used as an organizing tool for curriculum design and instruction. Occupations/career specialties are grouped into the Career Clusters based on the fact that they require a set of common knowledge and skills for career success. The Knowledge and Skills represented by Career Clusters prepare learners for a full range of occupations/career specialties, focusing on the holistic, polished blend of technical, academic, and employability knowledge and skills. This approach enhances the more traditional approach to career and technical education in which instruction may focus on one or two occupations and emphasize only specific occupational skills.

- **Career Pathways** – Career Pathways are sub-groupings of occupations/career specialties within a career cluster used as an organizing tool for curriculum design and instruction. Occupations/career specialties are grouped into Pathways based on the fact that they require a set of common knowledge and skills for career success.
- **Career Pathway Bridge** – A term used in the WTCS, a Career Pathway Bridge helps adults in need of basic skills or English Language Learning succeed in a Career Pathway. Bridges consist of courses that link basic skills development with occupational skills development and accelerate the transition from pre-college to college level work.
- **Career and Technical Education (CTE)** – Instructional programs designed to achieve student mastery of skills and knowledge. Current programs in high school and technical colleges are transitioning to align with Career Clusters and Pathways. High quality CTE employs work-based learning and CTSO involvement in addition to coursework. A CTE is an instructional program that includes a rigorous sequence of quality academic content and technical skills, with a focus on specific Career Clusters and Pathways. Programs prepare students to successfully transition to post-secondary education or work.
- **Career and Technical Student Organization (CTSO)** – Co-curricular career-based student organizations recognized by the U.S. Department of Education that are related to a specific Career and Technical Education field.
- **Career awareness** – Activities that incorporate workplace operations to illustrate why people work, the kinds of conditions under which work is performed, the various levels of training and education needed to work, appropriate work behaviors, and how expectations at school are related to expectations in the world of work.
- **Career exploration** – Activities covering the entire career spectrum using clusters of similar or related careers as a framework to study all occupational groups while simultaneously evaluating personal interests and skills in relation to the jobs studied.
- **Career planning and preparation** – Activities which are focused on personal career interest areas and experiencing the work in these areas.
- **Career (occupational) Specialties** – These are particular careers or occupations based on advanced knowledge and skills specific to a career or occupation.
- **Career/Tech Prep** – This term refers to Career Prep or Tech Prep. Currently both terms are used to describe a school-to-work transition program that helps students make the connection between high school, post-secondary education and employment. As a statewide career development system, Career/Tech Prep provides students with a planned program of study that incorporates academic and career-related articulated courses between secondary and post-secondary education.
- **Certificate** – An occupational credential typically awarded by a technical or community college or other educational provider after completion of a short-term program in a career specialty area.
- **College and Career readiness** – Involves three major skill areas: *core academic skill* and the ability to apply those skills to concrete situations in order to function in postsecondary education and the workplace; *employability skills* (such as critical thinking and responsibility) that are essential in any career area; *technical, job-specific skills* related to a specific career pathway.
- **COMPASS test** (offered by ACT-American College Testing)– See Accuplacer
- **Cooperative education** – A structured program combining academic and Career and Technical Education with work-based learning experience.
- **Curriculum/Program** – A set of courses, including prescribed content that is offered at a particular school; may be used to describe general requirements or a specific course; usually considered in broader terms than program of study.
- **DACUM** (**D**eveloping **A CU**rriculu**M**) – A process for developing a curriculum based occupational analysis which provides a framework for instructional development. In a DACUM process, a facilitator elicits collective insight about the occupation involving job duties and tasks associated with the successful achievement of the occupation from individuals who perform the duties of the occupation. By the end of the day, major competencies are identified and organized into natural groupings that form the basis for curriculum.
- **Doctoral Degree** – A doctoral degree is an academic or professional degree that qualifies the holder to teach or practice in a specific field such as philosophy, literature, law, or medicine. Examples are Doctor of Philosophy

(Ph.D.), Doctor of Medicine (M.D), and Doctor of Education (Ed.D.). Doctoral applicants were previously required to have a master's degree, but many programs will now accept students immediately following completion of their undergraduate studies.

- **Dual Credit** – See transcripted credit
- **Education for Employment** – A state statute designed to allow all youth opportunities to connect what is learned in school, understand and plan for future careers, master human relations skills needed for effective communication and work, understand the fundamentals of work and our economy, apply and manage technology, and access contemporary technical training and school-supervised work experience.
- **Employability Skills and Work Behaviors** – The skills needed by students to obtain and retain employment, and which are applicable and transferable to general employment situations. Skills such as organization, responsibility, dependability, honesty, teamwork, and integrity, which can all be translated into the work environment.
- **Horizontal Curriculum Alignment** – Horizontal alignment is the alignment of the curriculum being taught by teachers in a common subject or grade level**.**
- **Individualized Education Plan (IEP)** – Written plan and legal document that states special education student's present level of functioning; specific areas that need special services; annual goals; short-term objectives; services to be provided; and the method of evaluation to be implemented for children 3 to 21 years of age who have been determined eligible for special education.
- **Individualized Learning Plan (ILP)** – An ILP includes a program of study and learning that represents a mapped education plan reflecting a student's unique set of interests, needs, learning goals, and graduation requirements. It goes beyond the "four-year plan" by recording the student's connections to the larger community including examples of community service and volunteerism; membership in civic or community organizations; participation in leadership activities outside of school; involvement in job shadowing, mentorships, and/or Youth apprenticeships; and the pursuit of skill development through hobbies, athletics, and fine arts.
- **Internship** – Structured on-the-job training that provides experiences for students in order to help them determine interest in a career and meet contacts in the field.
- **Job shadowing** – A temporary, unpaid work experience where students learn about a job by spending a workday with an experienced worker.
- **Knowledge and Skills** – Knowledge and Skills are industry-validated statements that describe what learners/employees need to know, and to be able to do, for career success within a Cluster and/or Pathway.
- **Liberal Arts and Sciences** – Majors in the Liberal Arts and Sciences provide Pathways to a wide array of 21st century careers through preparation in such areas as knowledge of human cultures and the natural world; critical and creative thinking skills; effective communication skills; intercultural knowledge and competence; and individual, social, and environmental responsibility.
- **Master's Degree** – A master's degree is an academic degree that is awarded to individuals who have undergone study demonstrating a mastery of a specific field of study or area of professional practice. Generally students must have previously earned an undergraduate (bachelor's) degree.
- **Occupational Specialties** – See Career Specialties.
- **Post-secondary** – Education following high school—in Wisconsin post-secondary options include technical college, private and public 2- and 4- year colleges and universities and apprenticeship programs.
- **Post-secondary credit** – Credit awarded by a technical college, or a 2−year or 4−year college or university.
- **Private school** – An educational institution that is funded through tuition, fundraising, private grants, and donations without the support of public tax dollars
- **Program of Study (POS) Curriculum Framework** – A program of study is a sequence of instruction (based on recommended standards and knowledge and skills) consisting of coursework, co-curricular activities, work-site learning, service learning, and other learning experiences at the local school district level.
- **Public school** – An educational institution that is funded primarily by tax dollars.

- **Remediation** – At the post-secondary level, the coursework that entering students need to take before they demonstrate readiness for college-level study.
- **School-to-Work** – An initiative designed to improve school-to-work transitions for all students.
- **Student-centered** – A teaching philosophy whereby students learn best by interpreting information and/or concepts, learning through discovery while also setting the pace of their own learning. Teacher responsibilities when using student-centered approaches are to coach and mentor students to facilitate their learning and design experiences that allow students to develop and apply new knowledge and skills.
- **TABE** – Test of Adult Basic Education
- **Tech Prep** – See Career/Tech Prep
- **Technical Diploma** – Technical diplomas help individuals prepare for a targeted occupation, typically at the entry level. Credit requirements range from 3 to 70 credits and time to complete varies widely. Some credits may bridge into associate degree programs.
- **Transcripted (dual) Credit (TC)** – Post-secondary credit earned by a high school student for successfully completing a college level course. The student may request a transcript from the technical college, 2− or 4−year College, or university.
- **University** – A post-secondary educational institution, often consisting of several colleges, that offers bachelors, masters, and doctoral degrees and research opportunities in various branches of learning.
- **Vertical Curriculum Alignment** – is the alignment of the curriculum content being taught by teachers from one grade level through high school and into post-secondary education programs.
- **Vocational Education** – See Career and Technical Education (CTE).
- **Wisconsin Youth Apprenticeship** (YA) – This rigorous one- or two-year program is designed for high school juniors and seniors. It combines academic and technical instruction with paid on-the-job training at a mentored worksite. Wisconsin technical colleges may award credit for prior learning to apprenticeship program graduates.
- **Wisconsin Youth Options** – This program allows public high school juniors and seniors who meet certain requirements to take post-secondary courses at a UW institution, a Wisconsin technical college, one of the state's participating private nonprofit institutions of higher education, or tribally-controlled colleges. Approved courses count toward high school graduation and college credit.
- **Work-Based Learning (WBL)** – A set of planned educational experiences, either paid or unpaid, coordinated and supervised by licensed school personnel, and designed to enable learners to acquire work behaviors, skills, and knowledge for work and other life roles by participating in actual or simulated work settings. This includes job shadow, cooperative education, internships, and apprenticeships

Resources

- America's Career InfoNet (http://www.careerinfonet.org/)
- America's Career Resource Network (ACRN) (http://cte.ed.gov/acrn/)
- America's Job Bank(https://www.careeronestop.org/jobsearch/findjobs/state-job-banks.aspx)
- Association for Career and Technical Education (ACTE) (http://www.acteonline.org)
- Wisconsin District and School Performance Reports (https://apps2.dpi.wi.gov/sdpr/home)
- Career Cruising (https://public.careercruising.com/en/)
- Career and Technical Education Consortium of States (http://www.v-tecs.org/)
- Career Guide to Industries (http://www.bls.gov/oco/cg/cgs034.htm)
- Center on Wisconsin Strategy (http://www.cows.org/)
- Data Collection System DPI (https://dpi.wi.gov/wisedata)
- Data Collection System WTCS (http://www.wtcsystem.edu/reports/data/index.htm)
- Demographic Data DPI (https://dpi.wi.gov/assessment/dac/demographics)
- Developing a Curriculum (DACUM) (http://www.dacum.org/ and http://www.trc.eku.edu)
- Education for Employment (https://dpi.wi.gov/sites/default/files/imce/acp/pdf/pi26memo0108.pdf)
- High Schools That Work (HSTW) (http://www.sreb.org/page/1078/high_schools_that_work.html)
- Know How 2 Go Wisconsin http://www.knowhow2gowisconsin.org/
- Majors at Wisconsin Private Colleges (http://waicu.org/upload/2010Guide/WebContent/MajorAreasofStudy.pdf)
- Majors and Careers in the University of Wisconsin System (http://majormania.uwex.edu/)
- Major Programs in Wisconsin Technical Colleges (http://www.witechcolleges.org/Explore_Careers/career_programs.php)
- Making Sense of Data-Driven Decision Making in Education (http://www.rand.org/pubs/occasional_papers/2006/RAND_OP170.pdf)
- Model Academic Standards for School Counseling Programs (https://dpi.wi.gov/sspw/pupil-services/school-counseling/models)
- National Association of State Directors of Career and Technical Education Consortium (http://www.careertech.org)
- National Career Pathways Network (http://www.cord.org/ncpn-index.cfm/)
- National Center for Education Statistics (NCES) (http://nces.ed.gov/pubs2002/cip2000/index.asp)
- National Occupational Competency Testing Institute (NOCTI) (http://www.nocti.org)
- O*Net (Occupational Information Network) (http://www.onetonline.org/)
- Perkins IV (http://www.perkins4.org/)
- RISE (Regional Industry Skills Education) http://risepartnership.org/
- Special Education Data (https://dpi.wi.gov/sped/data)
- States Career Clusters Initiative (SCCI) (http://www.careerclusters.org/)
- Staff, Teacher and Program Data (http://winss.dpi.wi.gov/winss_dm-stafftchr)
- Sustaining School Improvement University of Wisconsin System (http://www.wisconsin.edu/)
- University of Wisconsin System Transfer Information System (http://tis.uwsa.edu/index.html)
- U.S. Department of Education - Office of Vocational and Adult Education (OVAE) (http://www2.ed.gov/about/offices/list/ovae/index.html)
- U.S. Department of Labor Occupational Outlook Handbook (http://www.bls.gov/oco/)
- WISCareers (http://wiscareers.wisc.edu/Default.asp)
- Wisconsin Association for Career and Technical Education (WACTE) (www.wacteonline.org)
- Wisconsin Association for Leadership in Education and Work (WALEW) (http://www.walew.org/)
- Wisconsin Career Pathway Web Site (http://www.wicareerPathways.org)
- Wisconsin Department of Workforce Development Labor Market Information (https://jobcenterofwisconsin.com/wisconomy/)
- Wisconsin DPI Agriculture and Natural Resources (http://dpi.wi.gov/ag)
- Wisconsin DPI Business and Information Technology (http://dpi.wi.gov/bit/)
- Wisconsin DPI Family and Consumer Sciences Education (http://dpi.wi.gov/fcs)

Appendix

- Wisconsin DPI Health Science Education (http://dpi.wi.gov/hs)
- Wisconsin DPI Marketing, Management, and Entrepreneurship Education (http://dpi.wi.gov/mmee)
- Wisconsin DPI Technology and Engineering (http://dpi.wi.gov/te)
- Wisconsin Private Colleges (http://www.privatecolleges-wisc.org/)
- Wisconsin School Performance Report (http://dpi.wi.gov/spr/)
- Wisconsin Technical College System (http://www.witechcolleges.org/)
- Youth Apprenticeship (https://dwd.wisconsin.gov/youthapprenticeship/)
- Youth Options (https://dpi.wi.gov/dual-enrollment)

Works Cited

Karp, M. M., Calcagno, J. C., Hughes, K. L., Jeong. D. W. & Bailey. T. R. (2007*). The post-secondary 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, University of Minnesota. Retrieved from http://136.165.122.102/UserFiles/File/pubs/Dual_Enrollment.pdf

Kearsley, G. & Shneiderman, B. (1999). *Engagement theory: A framework for technology-based teaching and learning*. Retrieved May 14, 2003, from http://home.sprynet.com/~gkearsley/engage.htm

Lekes, N., Bragg, D. D., Loeb, J. W., Oleksiw, C. A. Marszalek, J., LaRaviere, M. B.,Zhu, R., Kremidas, C. C., Akukwe, G., Lee, H-J. & Hood, L. K. (2007). *Career and technical education Pathway programs, academic performance, and the transition to college and career*. St. Paul, MN: National Research Center for Career and Technical Education, University of Minnesota. Retrieved from http://136.165.122.102/UserFiles/File/pubs/CTE_Pathway_Programs.pdf

Losh, Charles, "The States Career Cluster Initiative", 2002, Office of Vocational and Adult Education.

McClenney, Kay. (2006 March). Pathways to Student Success. Keynote speech CCTI Summit, League for Innovation in the Community College, Atlanta, GA.

National Research Council. (1999). How people learn: Brain, mind, experience, and school. Committee on Developments in the Science of Learning, J.D. Bransford, A.L. Brown, and R.R. Cocking (Eds.). Washington, DC: National Academy Press.

Obama, Barrack. (2010 August). Presidential Speech. University of Texas, Austin, Texas.

Sampson, David. (2001 December 7). Remarks to the 2001 Workforce Development Policy Forum, National Governor's Association, New Orleans, LA.

Vandal, Bruce, (2010). Rebuilding the Remedial Education Bridge to College Success. Getting Past Go. http://www.ecs.org/clearinghouse/86/55/8655.pdf

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Advanced Standing Versus Transcripted Credit Table

This table outlines the similarities and differences between the two types of articulation.

Terminology	Advanced Standing	Transcripted Credit
DEFINITIONS	Advanced Standing may also be referred to as • "credit in escrow" because the application of the credit is delayed until students enroll in a technical college program.	Transcripted Credit may also be referred to as: • "dual credit courses" as high schools also give credit. • "direct credit" because students are earning technical college credit directly from the technical college.
RELATIONSHIP BETWEEN HIGH SCHOOL AND TECHNICAL COLLEGE COURSES	High school course(s) or competencies are determined to be equivalent or comparable to a technical college course. Agreements require a minimum of a 3.0 grade point on a 4.0 scale for students to earn credit. High school grading policies and standards are followed.	Technical college curriculum is taught to high school students. A variety of delivery methods may be used. Students earn both high school credit and technical college credit simultaneously. Technical college grading policies and standards established in the agreement are followed.
TEACHER	Course is taught by a high school teacher who holds a current DPI license in the related area of instruction.	Course is taught by a WTCS certified technical college instructor or a high school instructor who holds a current DPI license in a related area and has been granted WTCS articulation certification under Wisconsin Administrative Code TCS 3.03(9) (b).
AWARDING CREDIT	The student must meet all conditions of the articulation agreement in order to be eligible for advanced standing credit. Technical college credits are awarded, however, technical college grades are not given for these courses.	Upon successful completion of course, grades are posted to an official technical college transcript and tabulated in the student's technical college GPA. Students earn technical college credit and high school credit simultaneously.

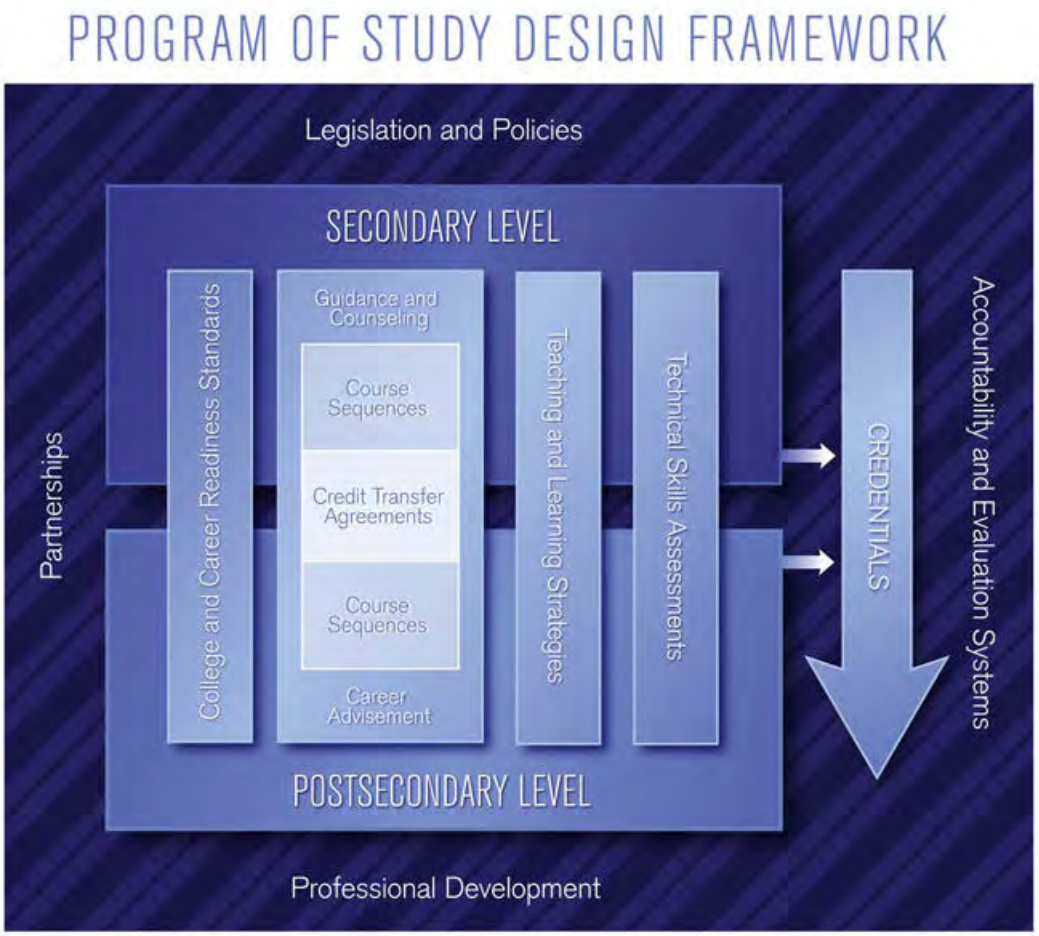
The link to this chart is located at:
http://systemattic.wtcsystem.edu/Grants/Perkins-4/tech-prep/Advanced-Standing-vs-Transcripted-Credit.doc

Appendix

Terminology	Advanced Standing	Transcripted Credit
DOCUMENTATION	The school district maintains the student's transcript. Under DPI, PI 26 Education for Employment; *The district must include specific information on pupil transcripts. This information includes the title of the course; the high school credits earned and whether those credits were earned through advanced standing, transcripted credit, or the advanced placement program; and the participating post-secondary institution, when appropriate.* Technical colleges may opt to give a "certificate of eligibility" that specifies the course title, course number and credits for which advanced standing may be granted upon enrollment at a technical college.	The technical college maintains the student's transcript for technical college course work. The school district maintains the student's transcript including high school and technical college course work. Under DPI, PI 26 Education for Employment; *The district must include specific information on pupil transcripts. This information includes the title of the course; the high school credits earned and whether those credits were earned through advanced standing, transcripted credit, or the advanced placement program; and the participating post-secondary institution, when appropriate.*
DATA REPORTING	School districts receiving Perkins funds are required to report current articulation in the Career and Technical Education Enrollment Reporting System (CTEERS).	The technical college reports the course in the WTCS Client Reporting System.
AGREEMENT/COSTS	Involves a written articulation agreement. No fees are charged to the student or school district.	Involves a written contractual agreement and cost-neutral arrangement between a school district and a technical college.
TRANSFER TO ANOTHER WTCS TECHNICAL COLLEGE	According to the Credit for Prior Learning policy (Educational Services Manual 12.10.5), technical college credit awarded for high school coursework covered by an articulation agreement at the originating technical college shall be accepted as credit toward completion of a comparable course or courses by the receiving technical college.	All courses taken for technical college credit appear on a student's transcript and shall be transferrable to other technical colleges who have the same program.

OVAE Ten Components Model

The *Ten Components* as adapted for Wisconsin from the Office of Vocational and Adult Education (OVAE), in collaboration with major national associations, organizations, and states. Following is a graphic of the OVAE model. The link is found at:
http://cte.ed.gov/nationalinitiatives/rposdesignframework.cfm .



Template for Submitting Practical Examples, Models, and Artifacts for the *Wisconsin Career Cluster and Pathway Framework Implementation Guide*

Title:

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Time Required:

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Steps to Implement/Procedure:

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Please send to: Sara Baird, Career Pathways Consultant, Department of Public Instruction,
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